

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that CENTRAL MAINE POWER CO

Located At 138 CANCO RD

Job ID: 2011-08-1838-ALTCOMM

CBL: 148 - - A - 006 - 001 - - - -

has permission to Add 5'6"x158'10" bump out to existing truck storage building provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

Fire Prevention Officer

[Handwritten signature] 8/30/4
Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
PENALTY FOR REMOVING THIS CARD**

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2011-08-1838-ALTCOMM	Date Applied: 7/29/2011	CBL: 148 - - A - 006 - 001 - - - - -	
Location of Construction: 138 CANCO RD	Owner Name: CENTRAL MAINE POWER CO.	Owner Address: 83 EDISON DR AUGUSTA, ME - MAINE 04336	Phone:
Business Name: Central Maine Power Co	Contractor Name: TBD	Contractor Address: Dan Spaulding- Spaulding Engineering, 24 Common St., Waterville, ME	Phone: 861-9923
Lessee/Buyer's Name:	Phone:	Permit Type: Bldg Addition	Zone: I-M
Past Use: Utility Company - offices -warehousing & trucking	Proposed Use: Same: Utility Company - to add 5'6" x 158'10" addition along the front of the existing truck doors	Cost of Work: \$350,000.00	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: B Type: 3B S1/S2 IBC-2009 Signature: JMB 8/30/11
Proposed Project Description: Addition to existing truck bay		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Lannie	Zoning Approval		

Special Zone or Reviews	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland <i>N/A</i> <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan <i>2011-305</i> <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: <i>OK</i> <i>8/4/11</i>	<input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	<input checked="" type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>[Signature]</i>

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**
 1. Footings/Setback/ prior to pouring concrete
 2. Periodic rebar Inspection prior to pouring concrete
 3. Close In Framing/Electrical prior to covering/insulation
 4. Final Inspection at completion, special inspection report required

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-08-1838-ALTCOMM

Located At: 138 CANCO

CBL: 148 - - A - 006 - 001 - - - -

Conditions of Approval:

Fire

1. All construction shall comply with City Code Chapter 10.
2. Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit and on the same circuit as the lighting for the area they serve.
3. Fire extinguishers are required. Installation per NFPA 10.
4. The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.
5. A separate Fire Alarm Permit is required for new systems; or for work effecting more than 5 fire alarm devices; or replacement of a fire alarm panel with a different model.
6. A separate Suppression System Permit is required for all new suppression systems or sprinkler work effecting more than 20 heads.
7. Sprinkler protection shall be maintained. Where the system is to be shut down for maintenance or repair, the system shall be checked at the end of each day to insure the system has been placed back in service.
8. Non-combustible construction of this structure requires all construction to be Non-combustible.
9. Any cutting and welding done will require a Hot Work Permit from Fire Department.

Building

1. Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
2. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
3. A final special inspection report must be submitted prior to the final inspection. This report must demonstrate any deficiencies and corrective measures that were taken.



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted

Location/Address of Construction: <u>138 CAWCO ROAD</u>		
Total Square Footage of Proposed Structure/Area <u>874 SF ADDITION</u>		Square Footage of Lot <u>308,500 SF</u>
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# <u>148 A006 001</u>	Applicant * <u>must</u> be owner, Lessee or Buyer Name <u>CENTRAL MAINE POWER CO.</u> Address <u>83 EDISON DRIVE</u> City, State & Zip <u>AUGUSTA, ME 04336</u>	Telephone: <u>(207) 623-3521</u> <u>EXT. 2390</u> <u>BOB MESSER</u>
Lessee/DBA (If Applicable) <u>N/A</u>	Owner (if different from Applicant) Name Address <u>N/A</u> City, State & Zip	Cost Of Work: \$ <u>350,000</u> C of O Fee: \$ _____ Total Fee: \$ _____
Current legal use (i.e. single family) <u>Business/storage/warehouse CMP UTILITY SERVICE BLDG.</u> If vacant, what was the previous use? <u>N/A</u> Proposed Specific use: <u>ADDITION OF EAST TRUCK STORAGE BAYS TO ALLOW STORAGE OF LONGER TRUCKS</u> Is property part of a subdivision? <u>NO</u> If yes, please name _____ Project description: <u>THIS PROJECT WILL BE AN ADDITION OF 5'6" DEEP X 2 160' LONG @ THE EXISTING EAST TRUCK BAYS. THE ADDITION IS REQUIRED TO ALLOW NEW CMP LINE TRUCKS WHICH ARE NOW LENGTHY TO CONTINUE TO BE STORED IN THE EAST TRUCK BAYS</u>		
Contractor's name: <u>PROJECT IS CURRENTLY OUT TO BID.</u> Address: _____ City, State & Zip _____ Telephone _____ Who should we contact when the permit is ready: <u>DAN SPAULDING</u> Telephone: <u>(207) 866-9923</u> Mailing address: <u>SPAULDING ENGINEERING, 24 COMMON ST, WATERVILLE, ME 04701</u>		

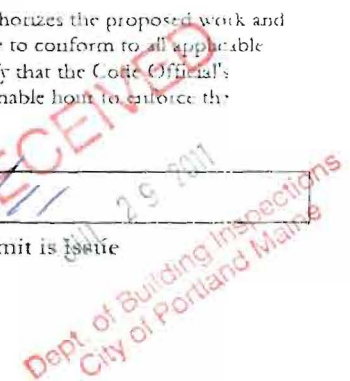
Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: Robert J Messer Date: 7/27/11

This is not a permit; you may not commence ANY work until the permit is issued



Spaulding Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

July 27, 2011

Building Inspections Division
City of Portland Maine
389 Congress Street
Portland, Maine 04101-3509

RE: Central Maine Power Company – 138 Canco Road, Proposed New 874 Square Foot East Truck Bay Addition – Building Permit Application

Dear sire or Madame,

Spaulding Engineering and Construction Services, Inc. on behalf of Central Maine Power Company is submitting a Building Permit Application for the new 874 square foot east truck bay addition at their 138 Canco Road facility. The new 5'-6" wide by 158'-10" long addition is being constructed in order to allow the newer model CMP line trucks to utilize the existing east truck bays. The new trucks are longer than the older models and do not fit in the existing truck bays.

Please find enclosed the following:

1. A check made out to the City of Portland in the amount of \$ 3520 for the "Building Permit"
 - a. Estimated construction costs = \$350,000
 - b. Fee:
 - \$30 for 1st \$1000 = \$30
 - \$10.00 for each addition \$1000 = $\$349,000/\$1000 \times \$10/\$1000 = \$3490.00$
 - **Total Fee: \$3520.00**
2. One (1) hard copy of the Building Permit Application.
3. One (1) full size 24" x 36" hard copy of the following design drawings:
 - 742-60-002 "Site Plan" Revision 0 dated 07/11/11.
 - 742-61-032 "New Cross Section & Details" Rev. 1 dated 07/19/11.
 - 742-60-001 "Plan & Elevation" Rev. 0 dated 07/11/11.
 - 742-64-002 "New Structural Elevation & Details" Rev. 0 dated 07/11/11
 - 742-64-003 "New Structural & Demolition Cross Sections" Rev. 0 dated 07/11/11
 - 742-64-004 "Foundation Plan & Details" Rev. 0 dated 07/11/11
 - 742-61-28 "Warehouse & Truck Bay Plan" Rev. 0 dated -7/11/11.

RECEIVED

JUL 29 2011

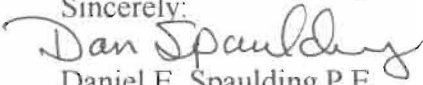
Dept. of Building Inspections
City of Portland Maine

Spaulding Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

4. One (1) full size 24" x 36" hard copy of the following reference drawings:
 - 51-367-0002r "First Floor Sprinkler Plan" dated 10/12/54.
 - 742-60-002 "2002 Oil/Water Interceptors Installation Site Plan, Sections and Details", Rev 2, dated 08/02/10
 - 742-61-23 "New Windows – East Elevation and First Floor Plan", Rev 1, dated 01/09/08
 - 51-116 "Plan, Property Line and Services", Rev , dated 03/24/54
 - 51-1256 "Site Plan Cable Storage Building", dated 04/26/73
 - 51-367- S1 "Foundation Plan", Rev 5, dated 08/24/55
 - 51-367- S8R "Second Floor & Low Roof Framing Plans", Rev 5, dated 08/23/55
 - 51-367-10 "Wall Sections #2", Rev 3, dated 10/5/54
 - 51-367 -S14 "Section B-B", Rev 2, dated 08/06/54
 - 51-367- S16 "Structural Wall Sections", Rev 3, dated 08/23/55
5. One (1) hard copy of the "Issued for Bid" Project Specifications.
6. One (1) Cd with the application, drawings and bid specifications in electronic format.

We believe that we have provided all of the information required to process the Building Permit. If you should have any questions, comments or require any further information regarding the proposed development, please contact me at (207) 861-9923.

Sincerely:

Daniel E. Spaulding P.E.

CC: R. Meader, CMP
R. Arbour, CMP
G. Mirabile, CMP



Certificate of Design

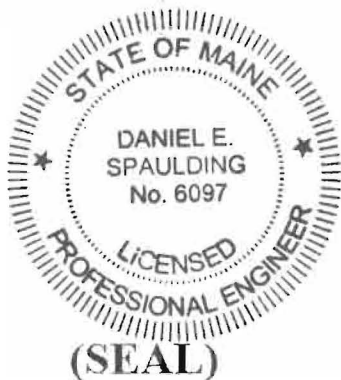
Date: July 27, 2011

From: SPAULDING ENGINEERING & CONSTRUCTION SERVICES, INC.

These plans and / or specifications covering construction work on:

874 SQUARE FOOT ADDITION (5'-6" DEEP X 2160' LONG) TO THE EXISTING EAST TRUCK BAYS AT CMP'S PORTLAND SERVICE BUILDING

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the 2003 *International Building Code* and local amendments. 2009



Signature: Daniel E. Spaulding

Title: CIVIL ENGINEER

Firm: SPAULDING ENGINEERING & CONSTR. SVC. INC.

Address: 24 COMMON STREET

WATERVILLE, MAINE 04901

Phone: (207) 861-9923

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov



Spaulding Engineering and Construction Services, Inc.

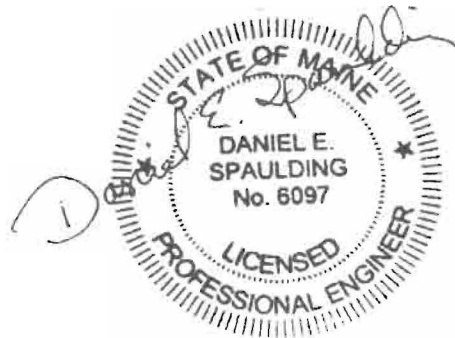
24 Common Street ~ Waterville, Maine 04901

Phone (207) 861-9923 ~ Fax (207) 861-9923

CENTRAL MAINE POWER COMPANY

*NEW 874 SQUARE FOOT
EAST TRUCK BAYS ADDITION
TO THE EXISTING SERVICE BUILDING
LOCATED AT 138 CANCO ROAD IN
PORTLAND, MAINE*

CERTIFICATE OF DESIGN APPLICATION



07/27/11

Prepared By: Daniel E. Spaulding P.E.
Spaulding Engineering and Construction Services, Inc.
24 Common Street
Waterville, Maine 04901
(207) 861-9923

Central Maine Power Company
East Truck Bay Addition/Extension
Certificate of Design Application
July 27, 2011
2 of 5

CERTIFICATE OF DESIGN APPLICATION

From Designer:

Daniel E. Spaulding P.E.
State of Maine PE Number: 6097
Spaulding Engineering and Construction Services, Inc.
24 Common Street
Waterville, Maine 04901
Tel. (207) 861-9923
Email: dan@spauldingengineering.com

Date: July 27, 2011

Job Name: Central Maine Power Company
2011 East Truck Bay Extension

Address of Construction: 138 Canco Road, Portland, Maine
Chart/Block/Lot: 148 A006001

Owner's Name and Address:

Central Maine Power Company
83 Edison Drive
Augusta, Maine 04336
Contact person: Mr. Robert Meader, Project Manager
Tel. (207) 623-3521 ext. 2390
Fax: (207) 621-4737
Cell: 458-3262
Email: robert.meader@cmpco.com

Project Data:

1. The total site area is 308,640 square feet.
2. The total disturb area for the new addition would be approximately 2685 square feet which would be represented by the 874 square feet for the building footprint and approximately 1811 square feet of repaving in front and on the sides of the new addition.
3. Proposed Paved Area: 218,500 square feet
4. Existing total impervious area: 284,510 square feet
5. Proposed total impervious area: 284,510 square feet
6. Proposed Impervious net change: 0 square feet

7. Proposed Building Foot Print: 53,242 square feet
8. Proposed Building footprint net change: 854 square feet
9. Existing Total Building Floor Area: 103,375 square feet
10. Proposed Total Building Floor Area: 104,249 square feet.
11. Proposed Building Floor Area Net change: 874 square feet

The existing building is a Mixed Use Group consisting of IBC Use groups B (business), S1 (moderate hazard storage) and S2 (low hazard storage). The structure is a separated mixed use. NFPA classifies the Classification of Occupancy as Business, Low Hazard Storage (Vehicle Parking) and Ordinary Hazard Storage for Maintenance Garage Portion of building.

The new truck bay addition will be an extension of the existing truck bay used to store vehicles only in IBC Use Group S2.

The new 874 square foot addition/extension will have the existing sprinkler system extended from the existing truck bays into the new addition/extension. The Sprinkler system modifications will be completed by Eastern Fire Systems in accordance with the 2009 IBC and NFPA 13.

The existing building is equipped with a supervisory alarm system.

No geotechnical/soils report was performed as the new addition loads are very small. Test pits were performed by Maine Test Borings to determine distance to rock. All test pits indicated that the structure foundations will be founded on rock or on gravel. A copy of the Maine Test Borings information is attached as Appendix A.

Photos of the existing east truck bay along Canco Road are attached in Appendix B.

Structure Design Calculations are included in Appendix C.

New 874 square foot truck bay addition/extension has been designed in accordance with the 2009 International Building Code (IBC) and the American Society of Civil Engineers (ASCE) "2010 Minimum Design Loads for Buildings and Other Structures" ASCE/SEI 7-10.

Use Group Classification(s): The new addition/extension will be attached to the existing S2 low hazard storage east truck bays. The truck bays are used for CMP line truck service only. No vehicle service is performed in this area.

Type of Construction: Type III.

Building Frame: Steel beams and columns.
Wall construction: Exterior walls will be 3 inch thick insulated wall panels.
Interior walls will be finished with ½" fire rated plywood.
Roof: 22 steel gauge deck with isocyanurate insulation and low slope fire rated (LSFR) EPDM membrane.

Wind Loads:

Wind loads were determined based on ASCE 7-10 Part 1: Enclosed, Partially Enclosed and Open Building of All Heights. The building while classified as an Enclosed structure when overhead doors are closed was also evaluated as a Partially Enclosed structure if doors are left open.

Basic Wind Speed for a Category IV is $V=130$ mph from ASCE 7-10 Figure 26.5-1B.

Building Category: Building is a Category IV from IBC Table 1604.5

Wind Exposure Category: Exposure B IBC 1609.4.3

Internal Wind Pressure: ASSCE 7-10

Enclosed Buildings: $GC_{pi} = +/- 0.18$ Table 26.11-1

Partially Enclosed Building: $GC_{pi} = +/- 0.55$ Table 26.11-1

Component and Cladding pressures: ASCE 7-10

Main Force Wind Pressures:

Enclosed Building:

Windward = 18.1 psf

Leeward = -7.4 psf

Sidewall = -16.3 psf

Partially Enclosed Building:

Windward = 25.8 psf

Leeward = -15.1 psf

Sidewall = -24.0 psf

Central Maine Power Company
East Truck Bay Addition/Extension
Certificate of Design Application
July 27, 2011
5 of 5

Earth Design Data:

Design Option Utilized: Allowable Stress Design

Seismic Use Group Category: C

Spectral Response Coefficients:

$SD_s = 0.267$

$SD_1 = 0.128$

Site Class: D

Roof Snow Load: ASCE 7-10

Roof Design Snow load: 50 psf

Roof Design Snow Load w/Drift: 110 psf

Ground Snow Load: 60 psf Figure 7-1

Flat Roof Snow Load: 50 psf

Snow Exposure Factor (C_e) = 1.0 Table 7-2., 26.7.3

Snow Importance Factor (I_s) = 1.2 Table 1.5-2

Roof Thermal Factor (C_t) = 1.0 Table 7-3

Seismic Design Category: C

Basis Seismic Force Resisting System: Cantilevered Columns

Response Modification Coefficient (R): $R = 1.25$

Deflection Amplification factor (C_d): $C_d = 1.25$

Analysis Procedure: ASCE Section 12.0 – Equivalent Lateral Force Procedure

Design Total Base Shear (V): $V = 14,518$ pounds

APPENDIX A

MAINE TEST BORINGS –SITE TEST PROBES

MAINE TEST BORINGS INC.
BREWER, ME 04412

Spaulding Engineering & Construction
 Dan Spaulding
 24 Common St
 Waterville ME

PROBE LOG

DRILLER: **Alonzo Francis** Ref#: _____ PO#: _____

Auger Size O.D. **4"**

PROJECT NAME and LOCATION: _____

MTB JOB NO: **2011-096** CMP Bldg, 162 Canco Rd
 Portland ME

BORING NO **P-3**
 LINE and STATION:
 OFFSET **6 ft off bldg**
 ELEVATION:
 DATE **06/21/2011**

BORING NO **P-4**
 LINE and STATION:
 OFFSET **6 ft off bldg**
 ELEVATION:
 DATE **06/21/2011**

DEPTH	STRATUM DESCRIPTION
0.4	Tar
3.5	Brown Sandy Gravel
3.8	Weathered Rock

Auger Refusal @ 3.8'
 Open & Dry

DEPTH	STRATUM DESCRIPTION
0.4	Tar
3.6	Brown Sandy Gravel
4.2	Light Brown Fine Sand
4.5	Weathered Rock

Auger Refusal @ 4.5'
 Open & Dry

REMARKS

REMARKS:

SOIL CLASSIFIED BY DRILLER VISUALLY

MAINE TEST BORINGS INC.
BREWER, ME 04412

Spaulding Engineeng & Construction

Dan Spaulding

24 Common St

Waterville

ME

PROBE LOG

DRILLER: Alonzo Francis

Ref#:

PO#:

**Auger
Size O.D.** 4"

PROJECT NAME and LOCATION:

MTB JOB NO: 2011-096

CMP Bldg, 162 Canco Rd

Portland

ME

BORING NO: P-7

BORING NO

LINE and STATION

LINE and STATION:

OFFSET 6 ft off bldg

OFFSET:

ELEVATION:

ELEVATION:

DATE 06/21/2011

DATE:

DEPTH **STRATUM DESCRIPTION**

DEPTH **STRATUM DESCRIPTION**

0.4

Tar

Brown Sandy Gravel

7.3

9.1

Light Brown Fine Sand w/Trace of Gravel

9.2

Weathered Rock

Auger Refusal @ 9.2'

Caved & Dry @ 7.1'

REMARKS

REMARKS:

SOIL CLASSIFIED BY DRILLER VISUALLY

APPENDIX B

**PHOTOS -EXISTING EAST TRUCK BAYS ALONG CANCO ROAD
LOCATION OF NEW ADDITION**

APPENDIX C
STRUCTURE DESIGN CALCULATIONS

2011 EAST TRUCK BAY ADDITION
PORTLAND SERVICE BUILDING LOADINGS

D.E. SPAULDING P.E.
SHT 1 OF 27
7/29/11

IN ACCORDANCE WITH IBC 2009 & ASCE 7-10

ASCE 7-10 CHAPTER 7 SNOW LOADS

$$P_f = 0.7 C_e C_t I_s P_g \quad \text{EQUATION (7.3-1)}$$

C_e Table 7-2

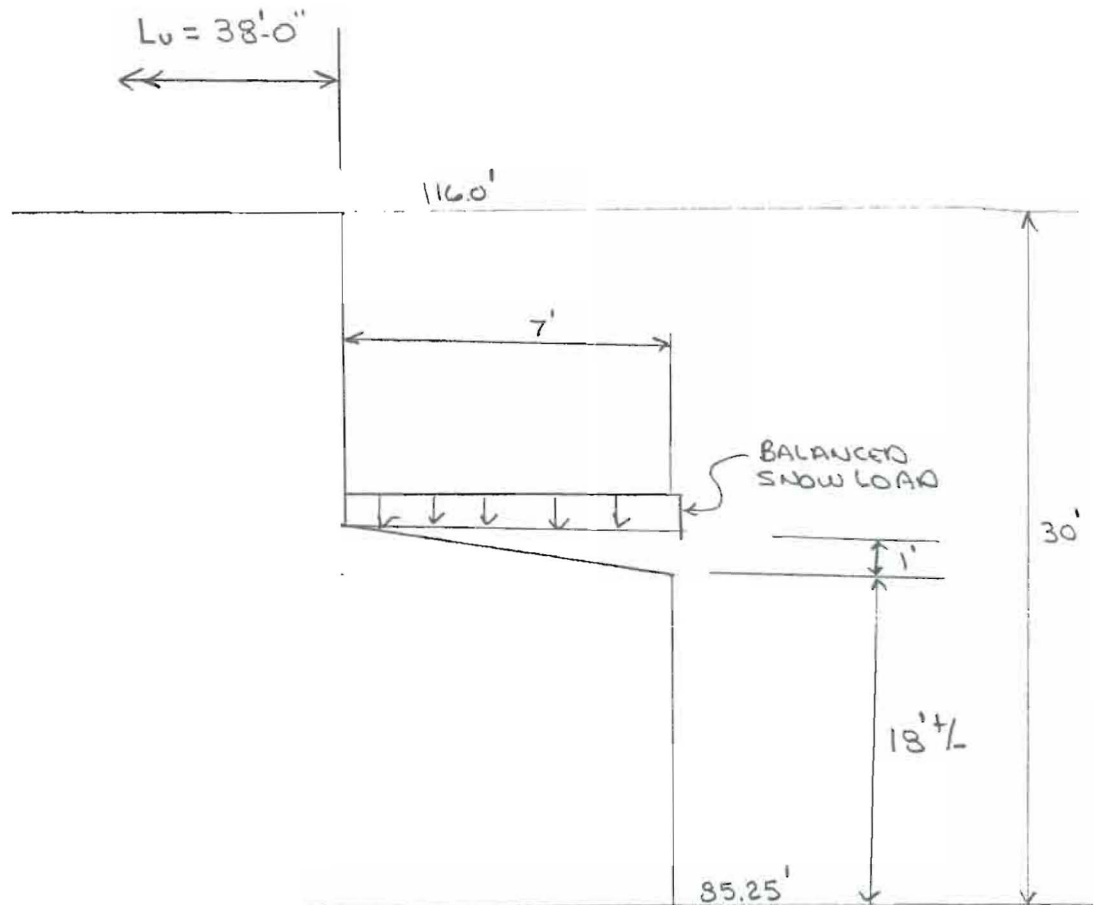
26.7.3 EXPOSURE B - PARTIALLY EXPOSED
 $C_e = 1.0$

C_t Table 7-3 $C_t = 1.0$

I_s - TABLE 1.5-2 RISK CATEGORY IV
 $I_s = 1.2$

P_g - Figure 7-1 = 60 psf

$$P_f = 0.7(1.0)(1.0)(1.2)(60 \text{ psf}) = 50.4 \text{ psf SAY } \underline{50 \text{ psf}}$$



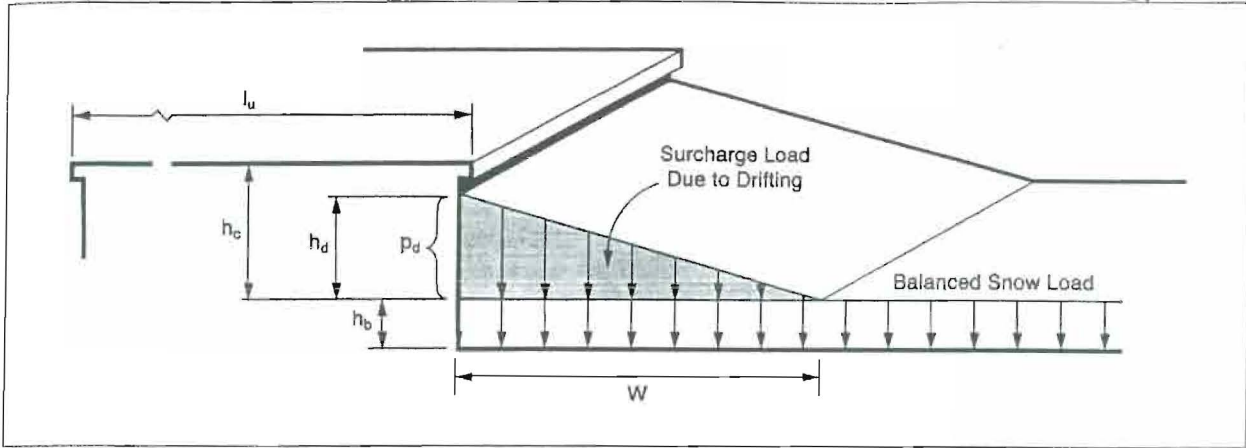


FIGURE 7-8 Configuration of Snow Drifts on Lower Roofs.

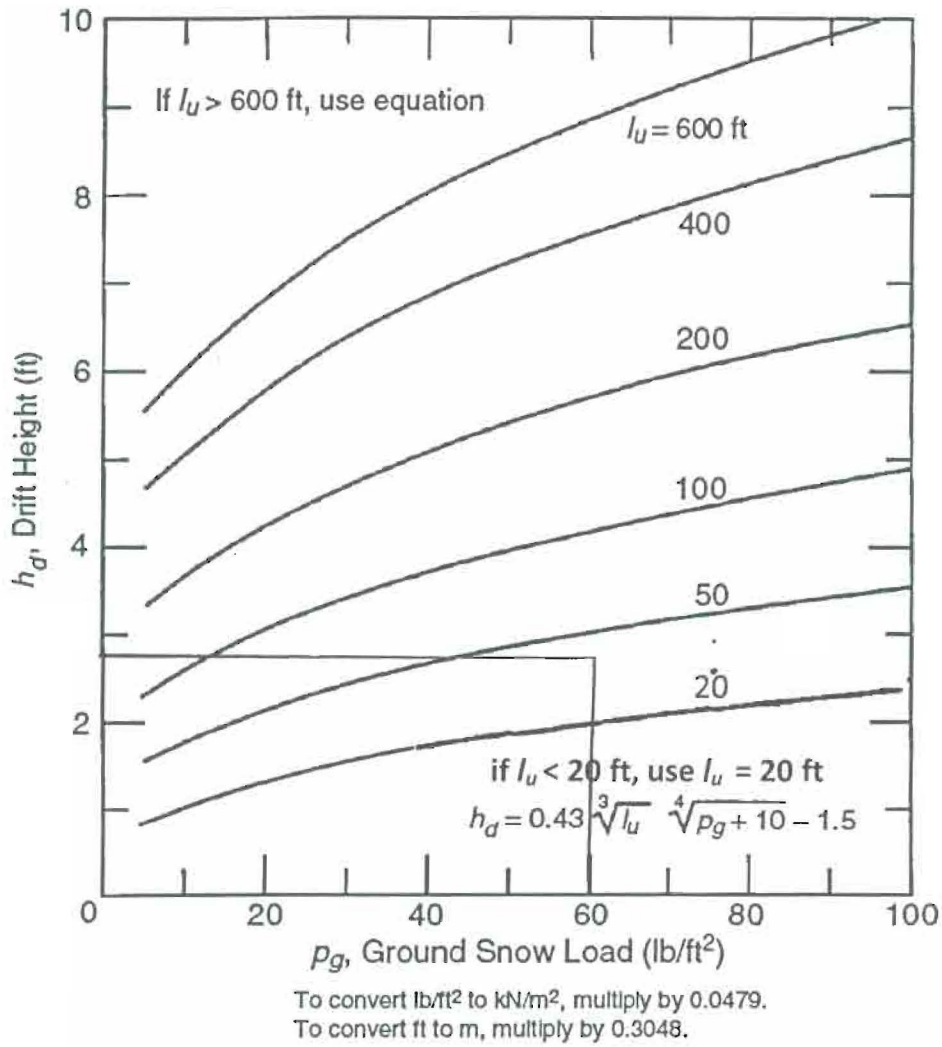
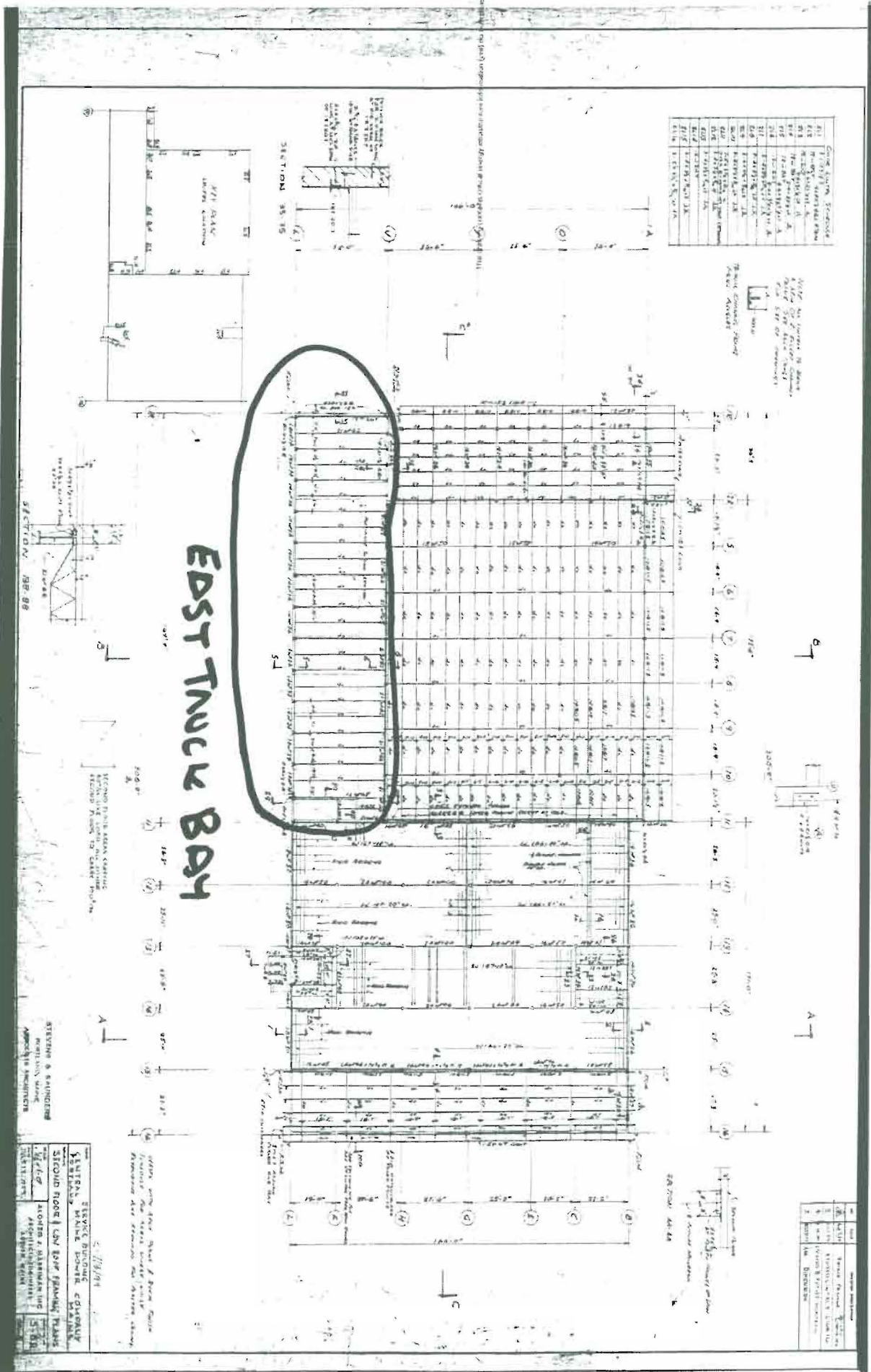


FIGURE 7-9 Graph and Equation for Determining Drift Height, h_d .



NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	CONCRETE			
2	STEEL			
3	BRICK			
4	PLASTER			
5	PAINT			
6	GLASS			
7	DOORS			
8	WINDOWS			
9	MECHANICAL			
10	ELECTRICAL			
11	FINISH			
12	FOUNDATION			
13	ROOFING			
14	CLADDING			
15	MECHANICAL			
16	ELECTRICAL			
17	FINISH			
18	FOUNDATION			
19	ROOFING			
20	CLADDING			

Notes:
 1. See Section 35-35 for details of wall and floor construction.
 2. See Section 36-36 for details of wall and floor construction.
 3. See Section 37-37 for details of wall and floor construction.

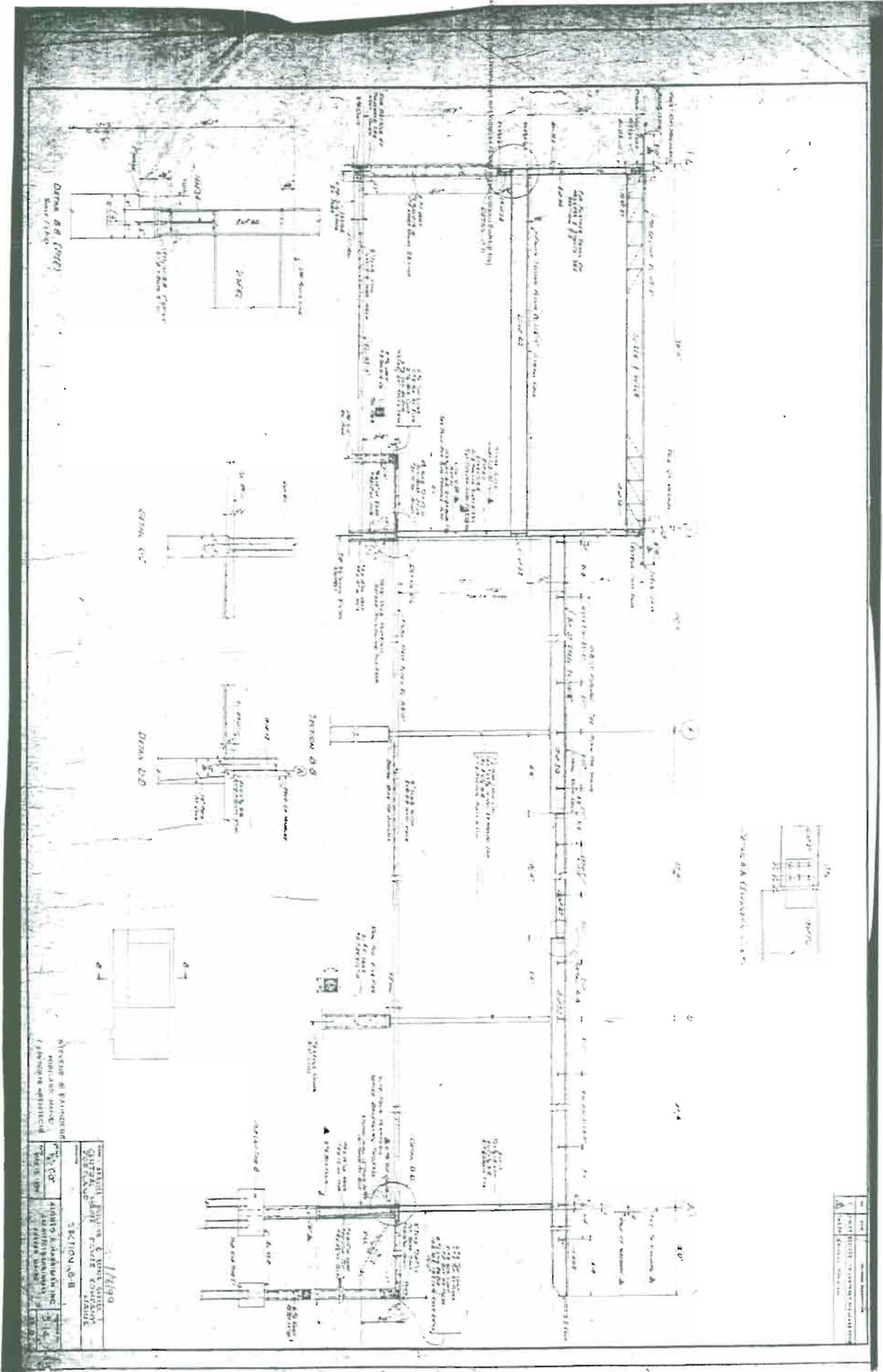
EAST TRUCK BAY

NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	CONCRETE			
2	STEEL			
3	BRICK			
4	PLASTER			
5	PAINT			
6	GLASS			
7	DOORS			
8	WINDOWS			
9	MECHANICAL			
10	ELECTRICAL			
11	FINISH			
12	FOUNDATION			
13	ROOFING			
14	CLADDING			

51-367

S-14

SHT 40227



SHEET NO. 40227 PROJECT NO. S-14 DRAWING TITLE: FLOOR PLAN DATE: 11/19/54	
ARCHITECT: HOKI & ASSOCIATES, INC. 1000 BROADWAY, NEW YORK 10004	ENGINEER: HOKI & ASSOCIATES, INC. 1000 BROADWAY, NEW YORK 10004
SECTION: A-B	

NO.	REVISION
1	AS SHOWN

FIGURE 7-9

STT 5 of 21

$$h_d = 0.43 \sqrt[3]{l_u} \sqrt[4]{p_g + 10} - 1.5$$

$$p_g = 60 \text{ psf}$$

$$l_u = 38'$$

$$h_e = 116.0' - 104.25' = 11.75'$$

$$h_d = 0.43 \sqrt[3]{38.0'} \sqrt[4]{60 + 10} - 1.5$$

$$(1.446)(2.893) - 1.5 = 2.68'$$

$$\gamma = 0.13(60 \text{ psf}) + 14 = 21.8 \text{ pcf}$$

$$h_b = 50.4 \text{ psf} / 21.8 \text{ pcf} = 2.31'$$

$$h_d = 2.66' \quad p_d = 2.66'(21.8 \text{ pcf}) = 58 \text{ psf}$$

DESIGN ENTIRE ROOF FOR $50.4 \text{ psf} + 58 = 108.4 \text{ psf}$
USE 108 psf

$$h_d = 2.66'$$

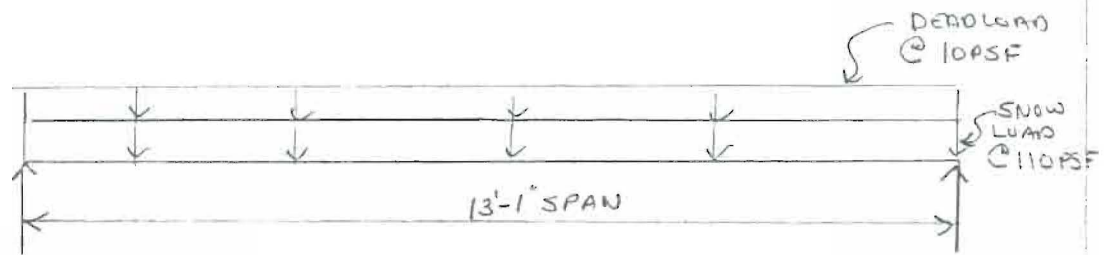
$$h_c = 11.75'$$

$$W = 4(h_d) = 4(2.66') = 10.64' > 7' \quad \therefore \text{DESIGN FOR } 108 \text{ psf}$$

USE 110 PSF ACROSS ENTIRE ROOF BEAMS

CROSS BEAM SUPPORT STEEL

SHT 6 OF 27



$$\text{TRIG WIDTH MAX} = (3'-6" + 2'-9") / 2 = 3.13'$$

$$M_{\text{max}} = (120 \text{ PSF})(3.13')(13.09')^2 / 8 = 8032.5 \text{'}^{\text{H}}$$

ASSUME $F_y = 0.6(50 \text{ ksi})$ A992 GRADE 50 STEEL

$$S_x \text{ REQ'D} = (8.033 \text{'}^{\text{H}} \times 12 \text{'}) / 30 \text{ ksi} = 3.2 \text{ IN}^3$$

TRY W8X15 $d = 8.11 \text{ in}$ $b_f = 4.02 \text{ in}$
 $t_w = 0.245 \text{ in}$ $t_f = 0.315 \text{ in}$
 $I_x = 49.0 \text{ IN}^4$
 $S_x = 11.8 \text{ IN}^3 > 3.2 \text{ IN}^3$

CHECK V

$$V_{\text{MAX}} = (120 \text{ PSF})(3.13')(13.09') / 2 = 2456.4 \text{'}^{\text{H}}$$

$$f_v = 2.46 \text{'}^{\text{H}} / (8.11 \text{ in})(0.245 \text{ in}) = 1.24 \text{ ksi} < 0.4(50 \text{ ksi})$$

CHECK Δ

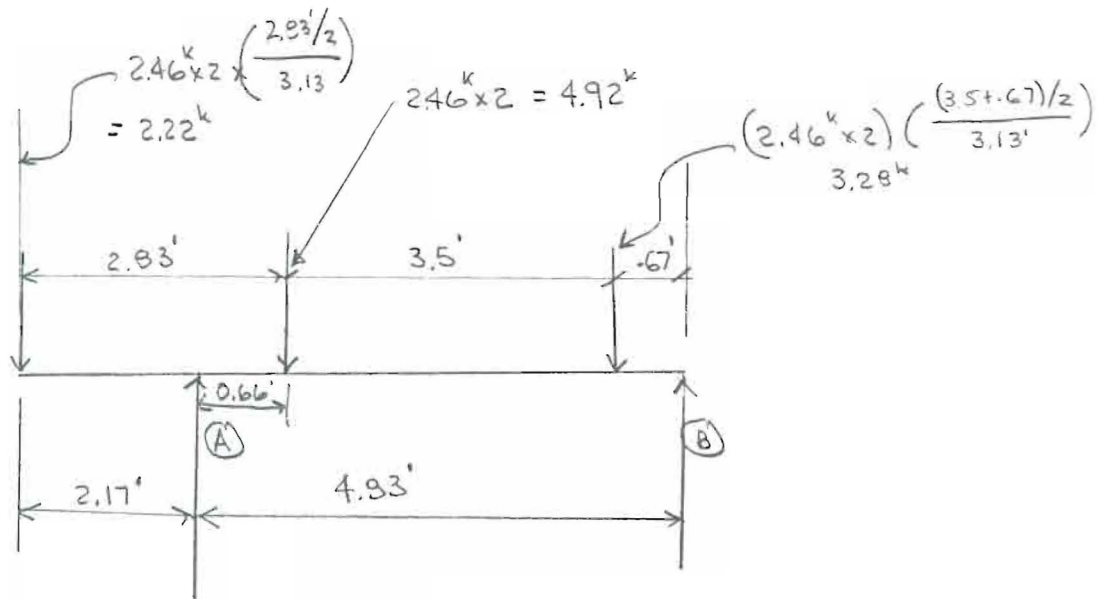
$$\Delta = \frac{5 w l^4}{384 E I}$$
$$= \frac{5 \left(\frac{120(3.13')}{12} \right) (157)^4}{384 (29,000,000 \text{ psi})(49.0 \text{ IN}^4)} = 0.18 \text{ IN}$$

$$l / 240 = \frac{13.09' \times 12 \text{'}}{240} = 0.65 \text{ IN}$$

USE W8X15 FOR CROSS BEAMS

MAIN ROOF GIRDER SUPPORTS @ COLUMNS

SHT 7 OF 27



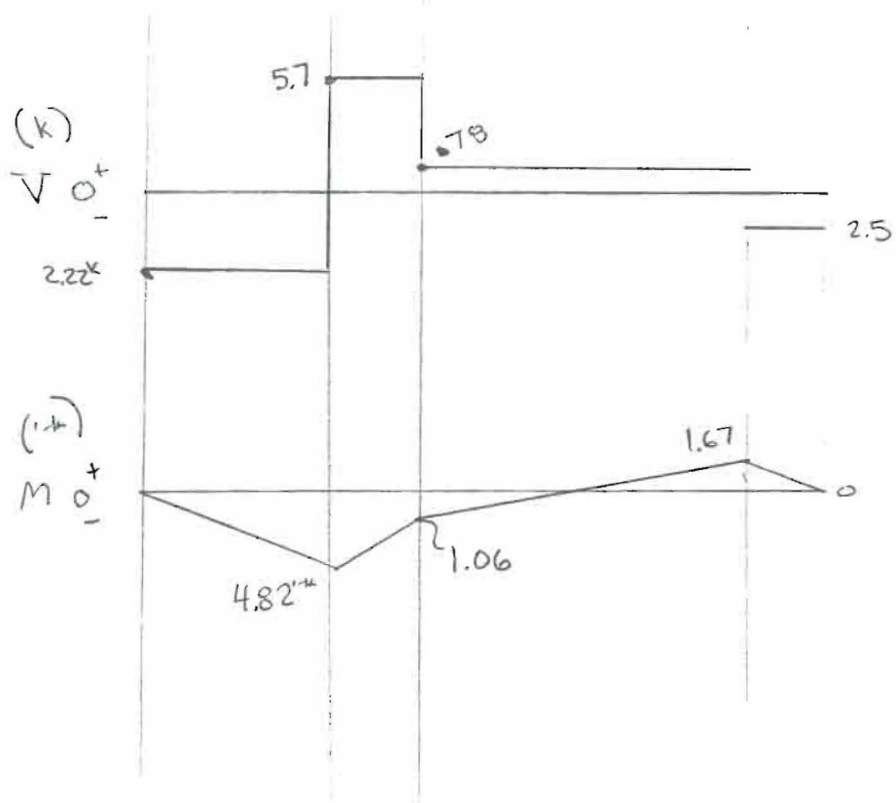
$$\sum M @ A = 0$$

$$-2.22^k(2.17') + 4.92^k(0.66') + 3.28^k(4.16') = 4.93' R_B$$

$$R_B = 2.5^k$$

$$\sum F_v = 0$$

$$\therefore R_A = 2.22^k + 4.92^k + 3.28^k - 2.5^k = 7.92^k$$



$$M_{\max} = 4.82 \text{ k-ft}$$

SHT 3 OF 27

$$F_b = 0.6 (50 \text{ ksi})$$

$$S_x \text{ req'd} = \frac{4.82 \text{ k-ft} \times 12 \text{ in/ft}}{30 \text{ ksi}} = 1.93 \text{ in}^3$$

USE W10x15 FOR FRAMING

$$d = 9.99 \text{ in} \quad b_f = 4.05 \text{ in}$$

$$t_w = 0.23 \text{ in} \quad t_f = 0.27 \text{ in}$$

$$S_x = 10.9 \text{ in}^3 \quad I_x = 53.9 \text{ in}^4$$

CHECK V

$$\text{MAX } V = 5.7 \text{ k}$$

$$f_v = \frac{5.7 \text{ k}}{9.99 \text{ in} \times 0.23 \text{ in}} = 2.48 \text{ ksi} < 0.4 (50 \text{ ksi})$$

O.K. BY INSPECTION USE W10x15

MAX DEAD & SNOW LOAD ON COLUMNS:

$$W6 \times 15 = 7.92 \text{ k}$$

$$HSS5 \times 5 = 2.5 \text{ k}$$

BUILDING RISK CATEGORY IV TABLE 1.5-2 $V = 130 \text{ MPH}$ FIGURE 26.5-1B K_d TABLE 26.6-1 BUILDINGS $K_d = 0.95$

EXPOSURE CATEGORY 26.7 EXPOSURE B

 K_z topographic factor TABLE 27.3-1 $Z = 18'$ EXPOSURE B USE $20' = Z$ $K_z = 1.0$ GUST EFFECT FACTOR G SECTION 26.9 $G = 0.95$

ENCLOSURE CLASSIFICATION 26.10

PARTIALLY ENCLOSED $G_{Cpi} = \begin{matrix} +0.55 \\ -0.55 \end{matrix}$ ENCLOSED $G_{Cpi} = \begin{matrix} +0.19 \\ -0.19 \end{matrix}$ OPEN $G_{Cpi} = 0.00$

VELOCITY PRESSURE EXPOSURE COEFFICIENT

 K_z or $K_h = 0.57$ TABLE 27.3-1

$$q_z = 0.00256 K_z k_{zt} K_d V^2$$

$$= 0.00256 (0.57) (1.0) (0.95) (130 \text{ MPH})^2 = 21 \text{ PSF}$$

ENCLOSED & PARTIALLY ENCLOSED

WINDOW

$$P = q G C_p - q_i (G_{Cpi}) \quad q_i = 21 \text{ PSF}$$

$$= 21 \text{ PSF} (0.95) (0.8) \pm 21 \text{ PSF} (0.19)$$

$q = 21 \text{ PSF}$

$G = 0.95$

$C_p = 0.8$ WINDOW AND WALL

$q_i = 21 \text{ PSF}$

$G_{Cpi} = 0.19$

$$P = (21 \text{ PSF}) (0.95) (0.8) \pm 21 \text{ psf} (0.19) = \underline{\underline{18.06 \text{ psf}}}$$

WORST CASE DOOR LEFT OPEN WIND BLOWING IN Z DIRECTION
PARTIALLY ENCLOSED:

$$p = (21 \text{ psf})(0.95)(0.9) \pm 21 \text{ psf}(0.55) =$$

$$17.28 \text{ psf} \pm 11.55 = \underline{25.93 \text{ psf}} \leftarrow \text{USE}$$

Leeward walls $L = 5'$
 $B = 160'$

$$L/B = 5/160 = 32 \therefore C_p = -0.5$$

$$p = (21 \text{ psf})(0.95)(-0.5) \pm 21 \text{ psf}(0.55) =$$

$$-8.93 - 11.55 = \underline{-20.4 \text{ psf}}$$

SIDEWALLS $C_p = -0.7$

$$p = (21 \text{ psf})(0.95)(-0.7) \pm 21 \text{ psf}(0.55) = -12.5 - 11.55$$

$$= \underline{-24 \text{ psf}}$$

WIND BLOWING IN X DIRECTION

Windward $p = 25 \text{ psf}$

Sidewall $p =$ C

$B = 4.10'$
 $L = 160'$

$$L/B = \frac{160}{4.10} = C_p = -0.2$$

$C_p = -0.2$

$$p = (21 \text{ psf})(0.95)(-0.2) \pm 21 \text{ psf}(0.55)$$

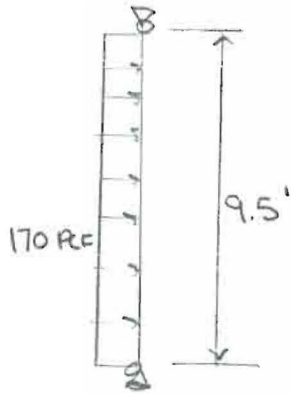
$$-3.57 - 11.55 = -15.12 \text{ psf}$$

WIND LOAD ON FRONT FACE OF NEW TRUCK BAY ADDITION

WIND ON C10x15.3 DOOR SIDE MEMBERS

MAX WIND = 26 PSF

LOAD ON SIDE CHANNEL (WORST CASE) = 26 PSF x $\frac{13.08'}{2}$ = 170 PLF



$$V_{max} = 170 \text{ PLF} \times \frac{9.5'}{2} = 807.5 \#$$

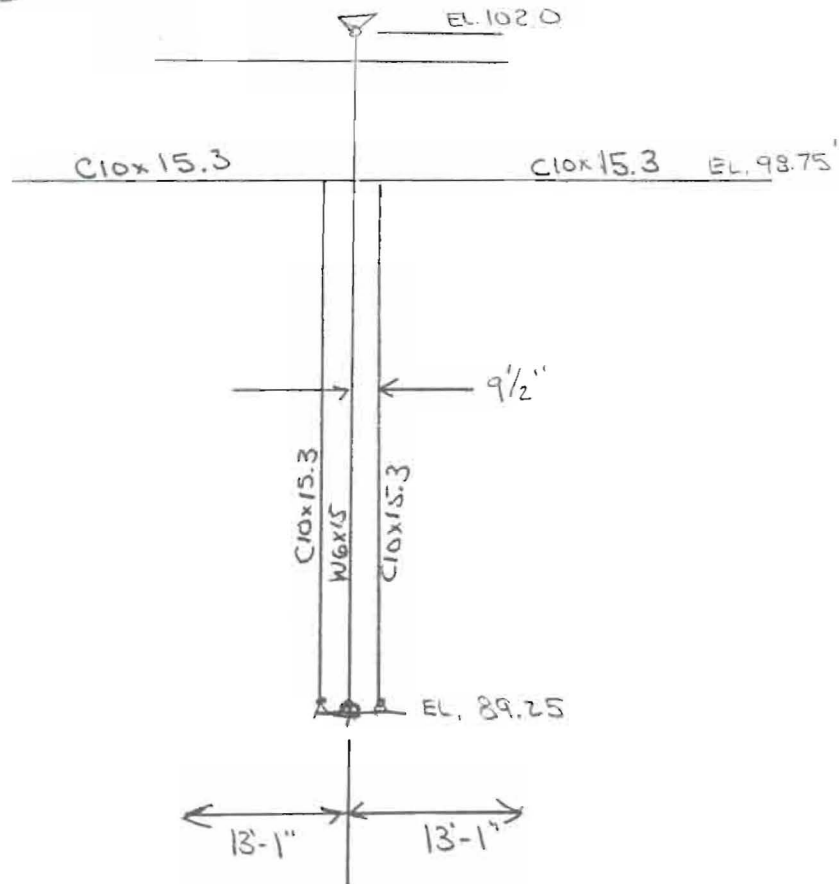
$$M_{max} = 170 \text{ PLF} \times \frac{(9.5')^2}{8} = 1918 \text{ ft-lb}$$

C10x15.3 $d=10.0$ $S_x=135 \text{ in}^3$
 $t_w=0.24$ $I_x=67.4 \text{ in}^4$

ASTM A36 $F_t=36 \text{ ksi}$ $F_y=0.6(36)=22 \text{ ksi}$

$$f_b = \frac{1918 \text{ ft-lb} \times 12 \text{ in/ft}}{135 \text{ in}^3} = 1700 \text{ PSI} < 22,000 \text{ PSI}$$

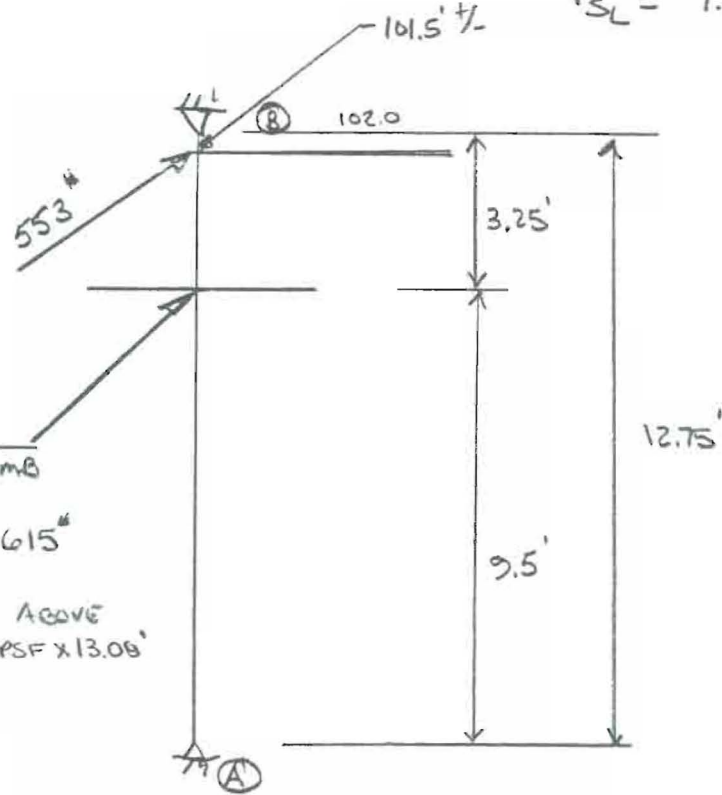
$\Delta \pm$ V.O.K BY INSPECTION



LOAD ON W6x15 COL
 P_{max} ROOF SNOW & DEAD LOAD = 7.92^k

$$P_{DL} = \frac{10}{120} \times 7.92^k = 0.66^k$$

$$P_{SL} = 7.26^k$$



DOOR C10x15.3 JAMB
 WIND LOAD =
 .8075' x 2 = 1615'

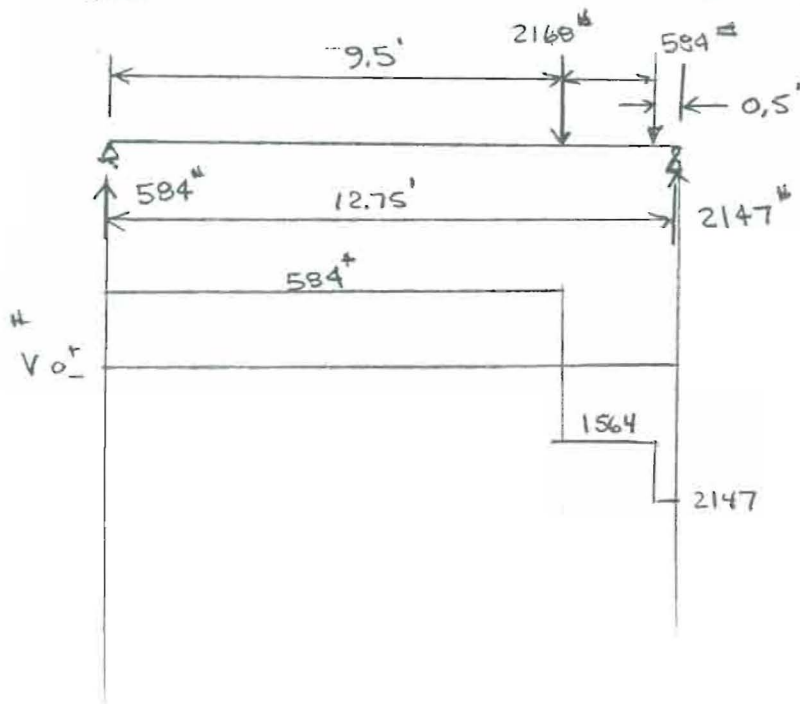
WIND FROM SIDING ABOVE
 DOOR = $\frac{3.25' \times 26\text{PSF} \times 13.08'}{2}$
 = 553'

$$\sum M @ A = 0 \quad (1615' + 553')(9.5') + 553'(12.75') = 12.75' R_B$$

$$20596' + 6774.25' = 12.75' R_B$$

$$R_B = 2147'$$

$$\sum F_u = 0 \quad 553'(2) + 1615' - 2147' = R_A \quad R_A = 584'$$

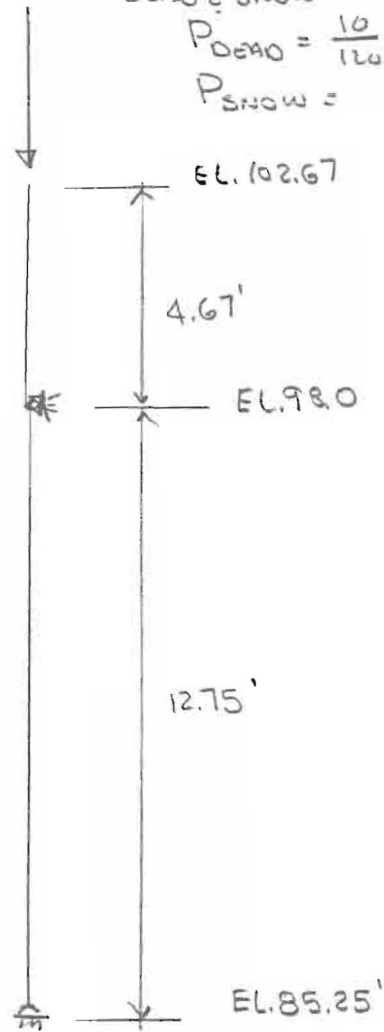


HSS 5x5x1/4 COLUMN

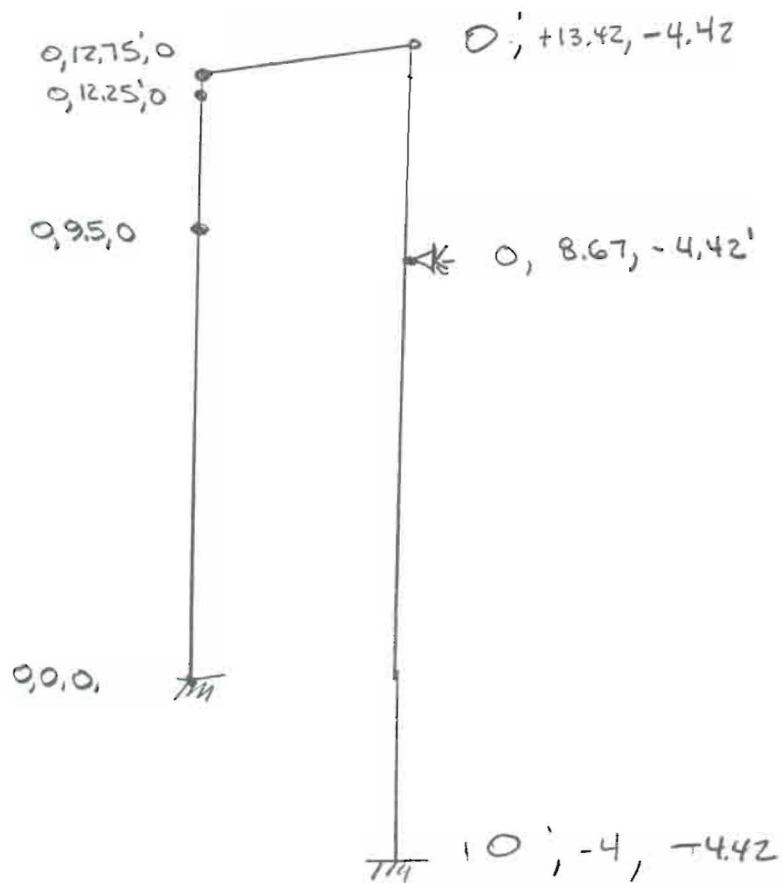
$$P_{\text{DEAD} \& \text{SNOW}} = 2.5^k \text{ SEE SHT 7.}$$

$$P_{\text{DEAD}} = \frac{10}{120}(2.5^k) = 0.21^k$$

$$P_{\text{SNOW}} = 2.29^k$$



- 1 D+S
- 2 D+0.6W
- 3 D+0.7E
- 4 D+0.75(0.6W)+0.75S
- 5 D+0.75(0.7E)+0.75S
- 6 0.6D+0.6W
- 7 0.6D+0.7E



JTs	0	0	0	0	FIXED
	1	0	9.5	0	
	2	0	12.75	0	
	3	0	12.75	0	
	4	0	-4.42	-4.42	FIXED
	5	0	8.67	-4.42	PINNED
	6	0	13.42	-4.42	

Members	0-1	W6x15
	1-2	W6x15
	2-3	W6x15
	4-5	HSS 5x5x $\frac{1}{8}$
	5-6	HSS 5x5x $\frac{1}{4}$
	3-6	W10x15

COLUMN W6X15 LOADS

$$\begin{aligned} \text{DEAD LOAD} &= 0.66^k \\ \text{SNOW LOAD} &= 7.26^k \end{aligned}$$

HSS 5x5x1/4

$$\begin{aligned} \text{DEAD LOAD} &= 0.21^k \\ \text{SNOW LOAD} &= 2.29^k \end{aligned}$$

WIND IN Z DIRECTION

$$553^k @ 12.5'$$

$$1615^k + 553^k = 2168^k @ 9.5'$$

EARTHQUAKE

$$E_{+x}, E_{-x} = 502^k @ 12.75'$$

$$E_{+z}, E_{-z} = 502^k @ 13.42'$$

$$V = C_s W$$

$$W_{\text{ROOF}} = \left(\begin{array}{l} 10 \text{ PSF DEAD LOAD} + 0.20 (110 \text{ PSF SNOW LOAD}) \\ (13.09' \times 75') \end{array} \right) = 3139.2^{\#}$$

$$C_s = 0.32$$

$$V = 0.32 (3139.2^{\#}) = 1004.5^{\#} / 2 \text{ COLUMNS}$$

$$\begin{aligned} &= 502^{\#} \text{ ON FRONT WIG COL} \\ &= 502^{\#} \text{ ON HSS } 5 \times 5 \text{ COL} \end{aligned}$$

$$T_a = C_t h_n^x$$

$$C_t = 0.02$$

$$x = 0.75$$

$$h_n = 12.75'$$

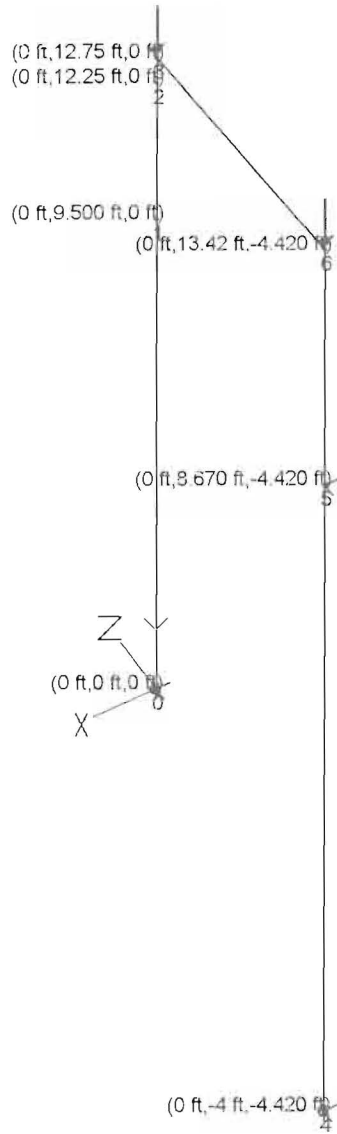
$$T_a = 0.02 (12.75)^{0.75} = 0.135 \quad \text{W6X15}$$

$$T_a = 0.02 (17.42)^{0.75} = 0.171 \quad \text{HSS } 5 \times 5 \quad \left. \begin{array}{l} \\ \end{array} \right\} K=1.0$$

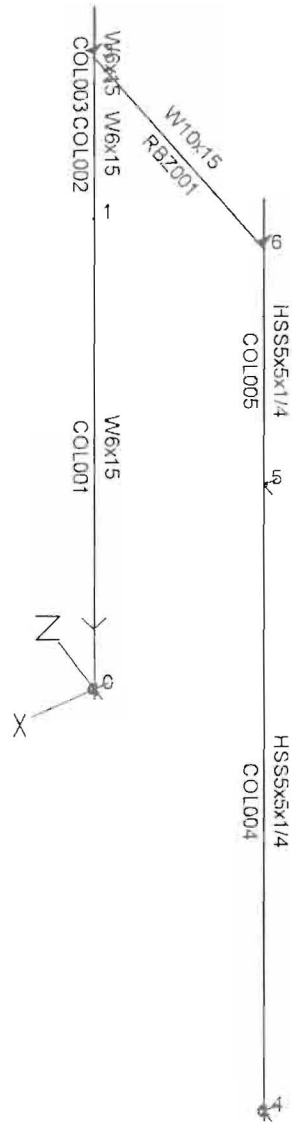
$$F_x = \frac{(3139.2^{\#}) (12.75)^{1.0}}{(3139.2^{\#}) 12.75 (1.0)} = 1.0$$

$$F_x = 1.0 (3139.2^{\#}) = 3139.2^{\#} / 2 \text{ COL} = 1570^{\#} \updownarrow$$

07-28-11 Cantilevered Bays
Spaulding Engineering, Daniel E. Spaulding
Jul 28, 2011; 04:57 PM
Load Case: D
IES VisualAnalysis 8.00 0009



07-28-11 Cantilevered Bays
Spaulding Engineering, Daniel E. Spaulding
Jul 28, 2011; 04:56 PM
Load Case: D
IES VisualAnalysis 8.00.0009



Member Unity Checks

Member	Unity	Check	Model Shape	Design Shape	Material	Reference
COL001	0.155	Weak Flexure Check	W6x15	W6x15	ASTM A992 Grade 50	F6-2
COL002	0.155	Weak Flexure Check	W6x15	W6x15	ASTM A992 Grade 50	F6-2
COL003	0.148	Weak Flexure Check	W6x15	W6x15	ASTM A992 Grade 50	F6-2
COL004	0.117	Weak Flexure Check	HSS5x5x1/4	HSS5x5x1/4	ASTM A500 Grade B (Fy = 46ksi)	F7-1
COL005	0.234	Weak Flexure Check	HSS5x5x1/4	HSS5x5x1/4	ASTM A500 Grade B (Fy = 46ksi)	F7-1
RBZ001	0.109	Combined Check	W10x15	W10x15	ASTM A992 Grade 50	H1-1b

Load Cases

Load Case	Design Checks	Seismic Type	Results	Analyze?	Envelope?
(1)D	-NA-	-NA-	Yes (2 sets)	Yes	No
(2)E+X	-NA-	-NA-	None	No	No
(3)E+Y	-NA-	-NA-	None	No	No
(4)E+Z	-NA-	-NA-	None	No	No
(5)E-X	-NA-	-NA-	None	No	No
(6)E-Y	-NA-	-NA-	None	No	No
(7)E-Z	-NA-	-NA-	None	No	No
(16)S	-NA-	-NA-	None	No	No
(34)W-Z	-NA-	-NA-	None	No	No
(37)0.6D+0.6W »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(38)0.6D+0.7E »+X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(39)0.6D+0.7E »+Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(40)0.6D+0.7E »+Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(41)0.6D+0.7E »-X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(42)0.6D+0.7E »-Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(43)0.6D+0.7E »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(44)D+0.6H	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(45)D+0.6W »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(46)D+0.75(L+0.6W+Lr) »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(47)D+0.75(L+0.6W+S) »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(48)D+0.75(L+0.7E+Lr) »+X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(49)D+0.75(L+0.7E+Lr) »+Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(50)D+0.75(L+0.7E+Lr) »+Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(51)D+0.75(L+0.7E+Lr) »-X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(52)D+0.75(L+0.7E+Lr) »-Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(53)D+0.75(L+0.7E+Lr) »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(54)D+0.75(L+0.7E+S) »+X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(55)D+0.75(L+0.7E+S) »+Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(56)D+0.75(L+0.7E+S) »+Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(57)D+0.75(L+0.7E+S) »-X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(58)D+0.75(L+0.7E+S) »-Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(59)D+0.75(L+0.7E+S) »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(60)D+0.75L+0.75S	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(61)D+0.7E »+X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(62)D+0.7E »+Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(63)D+0.7E »+Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(64)D+0.7E »-X	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(65)D+0.7E »-Y	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(66)D+0.7E »-Z	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No
(67)D+S	Allowable (ASD)	-NA-	Yes (2 sets)	Yes	No

Member Extreme Results

Member	Fx (lc)	Vy (lc)	Vz (lc)	Mx (lc)	My (lc)	Mz (lc)
	K	K	K	K-in	K-in	K-in
COL001	-8.123 (67)	-0.264 (64)	-0.055 (40)	-0.036 (64)	-19.113 (45)	-40.505 (61)
COL001	0.631 (39)	0.264 (61)	0.344 (45)	0.036 (61)	20.107 (45)	40.505 (64)
COL002	-7.980 (67)	-0.265 (64)	-0.958 (45)	-0.036 (64)	-11.511 (37)	-10.333 (61)
COL002	0.656 (39)	0.265 (61)	0.055 (66)	0.036 (61)	20.100 (45)	10.333 (64)
COL003	-7.938 (67)	-0.265 (64)	-1.289 (45)	-0.036 (64)	-19.246 (37)	-1.577 (61)

COL003	0.661 (39)	0.265 (61)	0.055 (43)	0.036 (61)	4.329 (66)	1.577 (64)
COL004	-0.093 (58)	-0.241 (61)	-0.243 (37)	-4.666 (64)	-24.612 (37)	-24.434 (61)
COL004	0.093 (1)	0.241 (64)	0.121 (63)	4.666 (61)	12.306 (37)	24.434 (64)
COL005	-2.867 (58)	-0.441 (64)	-0.649 (63)	-4.666 (64)	-24.746 (40)	-24.436 (61)
COL005	0.933 (39)	0.441 (61)	1.291 (45)	4.666 (61)	48.985 (45)	24.436 (64)
RBZ001	-1.225 (45)	-0.573 (63)	-0.089 (64)	-0.010 (61)	-4.718 (61)	-48.983 (45)
RBZ001	0.224 (63)	0.587 (45)	0.089 (61)	0.010 (64)	4.718 (64)	24.747 (40)

Nodal Extreme Displacements

Node	DX in	DY in	DZ in
1	-0.235 (64)	-0.007 (67)	-0.145 (37)
1	0.235 (61)	0.001 (39)	0.049 (63)
2	-0.353 (64)	-0.009 (67)	-0.119 (37)
2	0.353 (61)	0.001 (39)	0.057 (63)
3	-0.375 (64)	-0.010 (67)	-0.116 (37)
3	0.375 (61)	0.001 (39)	0.057 (63)
5	-NA-	-NA-	-NA-
5	-NA-	-NA-	-NA-
6	-0.170 (64)	-0.001 (58)	-0.115 (37)
6	0.170 (61)	0.000 (39)	0.057 (63)

Nodal Extreme Reactions

Node	FX K	FY K	FZ K	MX K-in	MY K-in	MZ K-in
0	-0.263 (38)	-0.545 (39)	-0.054 (40)	-4.087 (63)	-0.036 (61)	-40.475 (64)
0	0.263 (41)	8.123 (67)	0.344 (37)	19.107 (45)	0.036 (64)	40.475 (61)
4	-0.241 (64)	0.056 (38)	-0.243 (37)	-12.306 (37)	-4.666 (61)	-12.217 (61)
4	0.241 (61)	0.093 (58)	0.121 (63)	6.123 (63)	4.666 (64)	12.217 (64)
5	-0.681 (61)	-0.835 (39)	-0.770 (63)	-NA-	-NA-	-NA-
5	0.681 (64)	2.960 (58)	1.532 (37)	-NA-	-NA-	-NA-

Nodal Reactions

Node	Result Case Name	FX K	FY K	FZ K	MX K-in	MY K-in	MZ K-in
0	0.6D+0.6W »-Z Second Order	0.000	0.167	0.344	19.102	0.000	0.000
0	0.6D+0.7E »+X Second Order	-0.263	0.529	-0.000	-0.036	-0.036	40.400
0	0.6D+0.7E »+Y Second Order	0.000	-0.545	-0.000	-0.018	0.000	0.000
0	0.6D+0.7E »+Z Second Order	0.000	1.034	-0.054	-4.086	0.000	0.000
0	0.6D+0.7E »-X Second Order	0.263	0.529	-0.000	-0.036	0.036	-40.400
0	0.6D+0.7E »-Y Second Order	0.000	1.606	0.001	0.014	0.000	0.000
0	0.6D+0.7E »-Z Second Order	0.000	0.026	0.055	4.090	0.000	0.000
0	D Second Order	0.000	0.884	0.000	-0.004	0.000	0.000
0	D+0.6H Second Order	0.000	0.884	0.000	-0.004	0.000	0.000
0	D+0.6W »-Z Second Order	0.000	0.521	0.343	19.107	0.000	0.000
0	D+0.75(L+0.6W+Lr) »-Z Second Order	0.000	0.612	0.257	14.329	0.000	0.000
0	D+0.75(L+0.6W+S) »-Z Second Order	0.000	6.040	0.258	14.535	0.000	0.000
0	D+0.75(L+0.7E+Lr) »+X Second Order	-0.199	0.883	-0.000	-0.023	-0.028	30.645
0	D+0.75(L+0.7E+Lr) »+Y Second Order	0.000	0.069	-0.000	-0.016	0.000	0.000
0	D+0.75(L+0.7E+Lr) »+Z Second Order	0.000	1.265	-0.041	-3.096	0.000	0.000
0	D+0.75(L+0.7E+Lr) »-X Second Order	0.199	0.883	-0.000	-0.023	0.028	-30.645
0	D+0.75(L+0.7E+Lr) »-Y Second Order	0.000	1.698	0.001	0.008	0.000	0.000
0	D+0.75(L+0.7E+Lr) »-Z Second Order	0.000	0.502	0.042	3.093	0.000	0.000
0	D+0.75(L+0.7E+S) »+X Second Order	-0.195	6.312	0.004	0.094	-0.029	31.679
0	D+0.75(L+0.7E+S) »+Y Second Order	0.000	5.498	0.004	0.103	0.000	0.000
0	D+0.75(L+0.7E+S) »+Z Second Order	0.000	6.696	-0.035	-2.974	0.000	0.000
0	D+0.75(L+0.7E+S) »-X Second Order	0.195	6.312	0.004	0.094	0.029	-31.679
0	D+0.75(L+0.7E+S) »-Y Second Order	0.000	7.127	0.005	0.129	0.000	0.000

0	D+0.75(L+0.7E+S) »-Z Second Order	0.000	5.930	0.044	3.211	0.000	0.000
0	D+0.75L+0.75S Second Order	0.000	6.313	0.004	0.116	0.000	0.000
0	D+0.7E »+X Second Order	-0.263	0.883	-0.000	-0.038	-0.036	40.475
0	D+0.7E »+Y Second Order	0.000	-0.192	-0.000	-0.020	0.000	0.000
0	D+0.7E »+Z Second Order	0.000	1.387	-0.054	-4.087	0.000	0.000
0	D+0.7E »-X Second Order	0.263	0.883	-0.000	-0.038	0.036	-40.475
0	D+0.7E »-Y Second Order	0.000	1.960	0.001	0.012	0.000	0.000
0	D+0.7E »-Z Second Order	0.000	0.380	0.055	4.088	0.000	0.000
0	D+S Second Order	0.000	8.123	0.006	0.158	0.000	0.000
4	0.6D+0.6W »-Z Second Order	0.000	0.056	-0.243	-12.306	0.000	0.000
4	0.6D+0.7E »+X Second Order	0.241	0.056	0.000	0.035	-4.652	-12.201
4	0.6D+0.7E »+Y Second Order	0.000	0.056	-0.000	-0.012	0.000	0.000
4	0.6D+0.7E »+Z Second Order	0.000	0.056	0.120	6.102	0.000	0.000
4	0.6D+0.7E »-X Second Order	-0.241	0.056	0.000	0.035	4.652	12.201
4	0.6D+0.7E »-Y Second Order	0.000	0.056	0.001	0.069	0.000	0.000
4	0.6D+0.7E »-Z Second Order	0.000	0.056	-0.119	-6.051	0.000	0.000
4	D Second Order	0.000	0.093	0.001	0.047	0.000	0.000
4	D+0.6H Second Order	0.000	0.093	0.001	0.047	0.000	0.000
4	D+0.6W »-Z Second Order	0.000	0.093	-0.243	-12.292	0.000	0.000
4	D+0.75(L+0.6W+Lr) »-Z Second Order	0.000	0.093	-0.182	-9.207	0.000	0.000
4	D+0.75(L+0.6W+S) »-Z Second Order	0.000	0.093	-0.177	-8.975	0.000	0.000
4	D+0.75(L+0.7E+Lr) »+X Second Order	0.183	0.093	0.001	0.051	-3.533	-9.250
4	D+0.75(L+0.7E+Lr) »+Y Second Order	0.000	0.093	0.000	0.017	0.000	0.000
4	D+0.75(L+0.7E+Lr) »+Z Second Order	0.000	0.093	0.092	4.648	0.000	0.000
4	D+0.75(L+0.7E+Lr) »-X Second Order	-0.183	0.093	0.001	0.051	3.533	9.250
4	D+0.75(L+0.7E+Lr) »-Y Second Order	0.000	0.093	0.002	0.078	0.000	0.000
4	D+0.75(L+0.7E+Lr) »-Z Second Order	0.000	0.093	-0.090	-4.556	0.000	0.000
4	D+0.75(L+0.7E+S) »+X Second Order	0.187	0.093	0.007	0.346	-3.736	-9.459
4	D+0.75(L+0.7E+S) »+Y Second Order	0.000	0.093	0.006	0.310	0.000	0.000
4	D+0.75(L+0.7E+S) »+Z Second Order	0.000	0.093	0.098	4.971	0.000	0.000
4	D+0.75(L+0.7E+S) »-X Second Order	-0.187	0.093	0.007	0.346	3.736	9.459
4	D+0.75(L+0.7E+S) »-Y Second Order	0.000	0.093	0.007	0.374	0.000	0.000
4	D+0.75(L+0.7E+S) »-Z Second Order	0.000	0.093	-0.085	-4.290	0.000	0.000
4	D+0.75L+0.75S Second Order	0.000	0.093	0.007	0.342	0.000	0.000
4	D+0.7E »+X Second Order	0.241	0.093	0.001	0.054	-4.666	-12.217
4	D+0.7E »+Y Second Order	0.000	0.093	0.000	0.007	0.000	0.000
4	D+0.7E »+Z Second Order	0.000	0.093	0.121	6.123	0.000	0.000
4	D+0.7E »-X Second Order	-0.241	0.093	0.001	0.054	4.666	12.217
4	D+0.7E »-Y Second Order	0.000	0.093	0.002	0.088	0.000	0.000
4	D+0.7E »-Z Second Order	0.000	0.093	-0.119	-6.034	0.000	0.000
4	D+S Second Order	0.000	0.093	0.009	0.441	0.000	0.000
5	0.6D+0.6W »-Z Second Order	0.000	0.608	1.532	-NA-	-NA-	-NA-
5	0.6D+0.7E »+X Second Order	-0.681	0.246	-0.000	-NA-	-NA-	-NA-
5	0.6D+0.7E »+Y Second Order	0.000	-0.835	0.001	-NA-	-NA-	-NA-
5	0.6D+0.7E »+Z Second Order	0.000	-0.258	-0.769	-NA-	-NA-	-NA-
5	0.6D+0.7E »-X Second Order	0.681	0.246	-0.000	-NA-	-NA-	-NA-
5	0.6D+0.7E »-Y Second Order	0.000	1.325	-0.002	-NA-	-NA-	-NA-
5	0.6D+0.7E »-Z Second Order	0.000	0.749	0.767	-NA-	-NA-	-NA-
5	D Second Order	0.000	0.408	-0.001	-NA-	-NA-	-NA-
5	D+0.6H Second Order	0.000	0.408	-0.001	-NA-	-NA-	-NA-
5	D+0.6W »-Z Second Order	0.000	0.771	1.532	-NA-	-NA-	-NA-
5	D+0.75(L+0.6W+Lr) »-Z Second Order	0.000	0.680	1.149	-NA-	-NA-	-NA-
5	D+0.75(L+0.6W+S) »-Z Second Order	0.000	2.415	1.144	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »+X Second Order	-0.516	0.409	-0.001	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »+Y Second Order	0.000	-0.410	-0.000	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »+Z Second Order	0.000	0.027	-0.583	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »-X Second Order	0.516	0.409	-0.001	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »-Y Second Order	0.000	1.226	-0.002	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+Lr) »-Z Second Order	0.000	0.790	0.580	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+S) »+X Second Order	-0.524	2.142	-0.011	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+S) »+Y Second Order	0.000	1.324	-0.010	-NA-	-NA-	-NA-

Project: 07-28-11 Cantilevered Bays

Daniel E. Spaulding, Spaulding Engineering

July 28, 2011

SHT 23 OF 27

5	D+0.75(L+0.7E+S) »+Z Second Order	0.000	1.759	-0.595	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+S) »-X Second Order	0.524	2.142	-0.011	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+S) »-Y Second Order	0.000	2.960	-0.012	-NA-	-NA-	-NA-
5	D+0.75(L+0.7E+S) »-Z Second Order	0.000	2.525	0.573	-NA-	-NA-	-NA-
5	D+0.75L+0.75S Second Order	0.000	2.142	-0.011	-NA-	-NA-	-NA-
5	D+0.7E »+X Second Order	-0.681	0.409	-0.001	-NA-	-NA-	-NA-
5	D+0.7E »+Y Second Order	0.000	-0.672	0.000	-NA-	-NA-	-NA-
5	D+0.7E »+Z Second Order	0.000	-0.095	-0.770	-NA-	-NA-	-NA-
5	D+0.7E »-X Second Order	0.681	0.409	-0.001	-NA-	-NA-	-NA-
5	D+0.7E »-Y Second Order	0.000	1.489	-0.003	-NA-	-NA-	-NA-
5	D+0.7E »-Z Second Order	0.000	0.912	0.767	-NA-	-NA-	-NA-
5	D+S Second Order	0.000	2.720	-0.014	-NA-	-NA-	-NA-

CMP PARTRAWD SUB RUDN
TRUCK BAY ADDITION

SHR 24 05 27

EARTHQUAKE
IBC 2009
ASCE 7-10

SITE CLASS "D" TABLE 1613.5.2 IBC p. 341

FIGURE 1613.5(1) IBC p. 349 $S_g = 0.25$ SITE CLASS B ✓

FIGURE 1613.5(2) IBC p. 351 $S_1 = 0.08$ SITE CLASS B ✓

TABLE 1613.5.3(1) $S_g = 0.25$ $F_a = 1.6$ IBC p. 341 CLASS "D"

TABLE 1613.5.3(2) $S_1 = 0.08$ $F_v = 2.4$ IBC p. 341 CLASS "D"

EQUATION 16-36 IBC p. 340

$$S_{ms} = F_a S_g = 1.6(0.25) = 0.4$$

EQUATION 16-37 IBC p. 340

$$S_{m1} = F_v S_1 = (2.4)(0.08) = 0.192$$

EQUATION 16-38 IBC p. 342

$$S_{DS} = \frac{2}{3} S_{ms} = \frac{2}{3}(0.4) = 0.267$$

EQUATION 16-39 IBC p. 342

$$S_{D1} = \frac{2}{3} S_{m1} = \frac{2}{3}(0.192) = 0.128$$

SITE CLASSIFICATION SITE CLASS "D"

SEISMIC CATEGORY OCCUPANCY CATEGORY IV ✓

TABLE 1613.5.6(1) IBC p. 343 $S_{DS} = 0.267$ OCCUPANCY IV SEISMIC
DESIGN CATEGORY "C"

TABLE 1613.5.6(2) IBC p. 343 $S_{D1} = 0.128$ OCCUPANCY IV
SEISMIC DESIGN CATEGORY "C"

11.4.5 DESIGN RESPONSE SPECTRUM

Equation 11.4-5

p. 66 ASCE 7-10

$$S_a = S_{DS} \left(0.4 + 0.6 \frac{T}{T_0} \right)$$

$$T_0 = 0.2 \frac{S_{D1}}{S_{DS}} = 0.2 \left(\frac{0.128}{0.267} \right) = 0.0959$$

$$T_s = S_{D1} / S_{DS} = \left(\frac{0.128}{0.267} \right) = 0.4794 \checkmark$$

 $S_a @ 0$

$$= S_{DS} \left(0.4 + 0.6 \left(\frac{0}{T} \right) \right) = 0.4(0.267) = 0.1068$$

T
0
0.48 T_s

S_a
0.1068
0.267

$$S @ T_s \quad S_a = S_{DS} = 0.267$$

$$see eq. 2 \quad S_a = \frac{S_{D1}}{T} = \frac{0.128}{0.2}$$

$$see eq. 3 \quad \frac{S_{D1}}{T} = 0.128$$

$$see eq. 3 \quad \frac{S_{D1}}{T} = \frac{0.128}{2} = 0.064$$

1s
2s

0.128
0.064

IMPORTANCE FACTOR ASCE 7-10
TABLE 1.5-2 $I_e = 1.50$ CATEGORY IV pg 5 \checkmark

BASIC SEISMIC FORCE RESISTING SYSTEM
MOMENT FRAME IN "X" DIRECTION

TABLE 12.2.1 p. 75 C.4
SEISMIC DESIGN CATEGORY "C"

RESPONSE MODIFICATION COEFFICIENT: $R = 3\frac{1}{2}$

OVERSTRENGTH FACTOR $\Omega_o = 3$

DEFLECTION AMPLIFICATION FACTOR = 3

SEISMIC DESIGN CATEGORY C BUILDING HEIGHT LIMIT $h_n = NL$

EQUIVALENT LATERAL FORCE PROCEDURE:

12.8-1 SEISMIC BASE SHEAR

$$V = C_s W$$

$$R = 3.5$$

$$I = 1.5$$

$$S_{DS} = 0.267$$

$$C_s = \frac{0.267}{\left(\frac{3.5}{1.5}\right)} = 0.114$$

$W =$

$$\begin{aligned} \text{DEAD LOAD} &= 10 \text{ PSF} \times 6.83' \times 160' \text{ (ROOF)} = 10,928 \text{ \#} \\ &= 20 \text{ PSF} \times 3.25' \times 160' \text{ (TYPICAL)} = 10,400 \text{ \#} \end{aligned}$$

$$0.20 \text{ SNOW LOAD} = 0.20 \times 110 \text{ PSF} \times 6.83' \times 160' = 24,042 \text{ \#}$$

$$\underline{45,370 \text{ \#}}$$

$$\text{BASE SHEAR} = 0.114 (45,370 \text{ \#}) = 5172 \text{ \#}$$

$$\text{TOTAL OF 26 COLUMNS SHEAR/COLUMN} = \frac{5172 \text{ \#}}{26} = 199 \text{ \#/COL}$$

ALTERNATE LOOK @ COLUMNS AS FIXED BASE CANTILEVERS;
TABLE 12.2.1 p. 77 G, 2

RESPONSE MODIFICATION COEFFICIENT $R = 1.25$

OVERSTRENGTH FACTOR $\Omega_o = 1.25$

DEFLECTION AMPLIFICATION FACTOR $C_d = 1.25$

SEISMIC DESIGN CATEGORY "C" BUILDINGS HEIGHT LIMIT $h_n = 35'$

$$V = C_s W$$

$$R = 1.25$$

$$I = 1.5$$

$$S_A = 0.267$$

$$C_s = \frac{0.267}{\left(\frac{1.25}{1.5}\right)} = 0.32$$

$$W = 45,370^{\#}$$

$$\text{BASE SHEAR } V = 0.32(45,370^{\#}) = 14,519^{\#}$$

$$\text{TOTAL 26 COLUMNS SHEAR/COLUMN} = 14,519^{\#}/26 = 559^{\#}$$

Comments Submitted

Marge Schmuckal - Electronic Plan Review Task for PEZ.2011-305.LEVII.FNSP0.765

From: <eplan_admin@portlandmaine.gov>
To: <mes@portlandmaine.gov>
Date: 7/29/2011 9:49 AM
Subject: Electronic Plan Review Task for PEZ.2011-305.LEVII.FNSP0.765

Electronic Plan Review
Task Assignment
Department Review



Please do not reply to this email, it is system generated.

Hello :

As a Plan Reviewer, you are tasked with reviewing the Plans and Documents for this Project. Please login to Electronic Plan Review, click on the task for this Project and begin the Review Process. If the task is no longer there, it means that another Plan Reviewer in your department has begun the review, and you may disregard this email. Please contact the appropriate department at the numbers listed below if you have any questions regarding this email.

Project Name: PEZ.2011-305.LEVII.FNSP0.765
Project Description: 138 Canco Road - 2011-305 / 140-A-6
Task: DepartmentReview
Instructions: Upon acceptance of task, please review the required drawings and documents and provide an appropriate response and status.

[Login to Electronic Plan Review](#)

Department of Planning and Urban Development
City of Portland
389 Congress Street
Portland, ME 04101

Planning Division, Development Review Services
(207) 874-8719

Building Permits
(207) 874-8703

138 Canco Road – 148-A-6 – I-M Zone

#2011-305 – CMP building addition

8/2/2011

This is an already developed site built approximately in 1955, prior to current zoning. The entire site is located in an I-M Zone. The applicant is proposing to add a 30'8" high addition 158'10" that extends 5.5' forward toward the street from the existing building. The use is offices, warehousing and automotive (truck) repairs. All uses are allowable in the I-M Zone.

The current setback to the front property line is just over 50 feet. The 5.5' addition will result in the front setback of 44.5'. The 5.5' addition is meet all setback requirements.

The applicant discloses that the current and post construction impervious surface is about 92% which is above the 75% maximum requirement. This property was developed prior to the 1957 basis in 1955. Therefore this property is legally nonconforming for impervious surface. The addition that extends 5.5' is being placed in an area that is already paved. It is not increasing the legal nonconformity. The small proposed extension *does not* necessitate the entire property to come into conformity with the current 75% impervious surface ratio.

Separate building permits are required.

Marge Schmuckal
Zoning Administrator

Applicant: *CMF*

Date: *7/26/11*

Address: *1380 Canco Rd* *8/2/11* *work set up in* *OSO*

C-B-L: *148-A-6*

CHECK-LIST AGAINST ZONING ORDINANCE

Date -

Zone Location - *I-M*

office - Warehouse
Truck repairs

Interior or corner lot -

Proposed Use/Work - *Add 874# Addition 5'6" x 158'10" going towards the*

Sewage Disposal -

Lot Street Frontage -

Front Yard - *1' for each 1' of height currently ~ 50' to front prop. line - well (44')*

Rear Yard - *1' for each 1' of height up to 25' - N/A no change*

Side Yard - *1' for each 1' of height up to 25' - over 50' on side FL*

Projections -

Width of Lot -

Height - *we check existing Bldg - 30'8" given for existing Bldg height*

Lot Area - *303,647# given*

Address

Lot Coverage/ Impervious Surface - *15% MAX (currently 92%)*

Area per Family -

Off-street Parking -

Loading Bays -

Site Plan - *2011-305*

Shoreland Zoning/ Stream Protection - *N/A*

Flood Plains - *Panel 7*

Spaulding Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

July 19, 2011

Ms. Barbara Barhydt
Development Review Services Manager
City of Portland Maine
Planning & Urban Development Department
Planning Division
389 Congress Street
Portland, Maine 04101-3509

RE: Central Maine Power Company – 138 Canco Road, Proposed New 874 Square Foot East Truck Bay Addition – Level II Final Site Plan Development Review Application

Dear Ms. Barhydt,

Thank-you for taking the time to meet with me on Thursday, July 30 to provide a preliminary review of Central Maine Power Company's proposed 874 square foot east line truck addition at their 138 Canco Road facility. The new 5'-6" wide by 158'-10" long addition is being constructed in order to allow the newer model CMP line trucks to utilize the existing east truck bays. The new trucks are longer than the older models and do not fit in the existing truck bays.

Spaulding Engineering and Construction Services, Inc. on behalf of Central Maine Power Company is submitting the Level II –Final Site Plan Development Review Application for the new 874 square foot east truck bay addition.

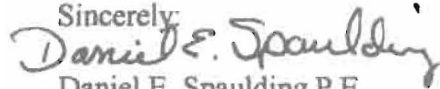
Please find enclosed the following:

1. A check made out to the City of Portland in the amount of \$ 400 for the "Level II Development Final Site Development Review"
2. One (1) hard copy of the Level II – Final Site Plan Development Review Application.
3. One (1) full size 24" x 36" hard copy of the following drawings:
 - 742-60-002 "Site Plan" Revision 0 dated 07/11/11.
 - 742-61-032 "New Cross Section & Details" Rev. 1 dated 07/19/11.
 - 742-60-001 "Plan & Elevation" Rev. 0 dated 07/11/11.
 - 742-64-002 "New Structural Elevation & Details" Rev. 0 dated 07/11/11
 - 742-64-003 "New Structural & Demolition Cross Sections" Rev. 0 dated 07/11/11
 - 742-64-004 "Foundation Plan & Details" Rev. 0 dated 07/11/11
 - 742-61-28 "Warehouse & Truck Bay Plan" Rev. 0 dated -7/11/11.
 - 51-367-0002r "First Floor Sprinkler Plan" dated 10/12/54.
4. One (1) Cd with the application and drawings in electronic format.

Spauling Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

We believe that we have provided all of the information required to proceed with the Level II - Final Site Plan Review. If you should have any questions, comments or require any further information regarding the proposed development, please contact me at (207) 861-9923.

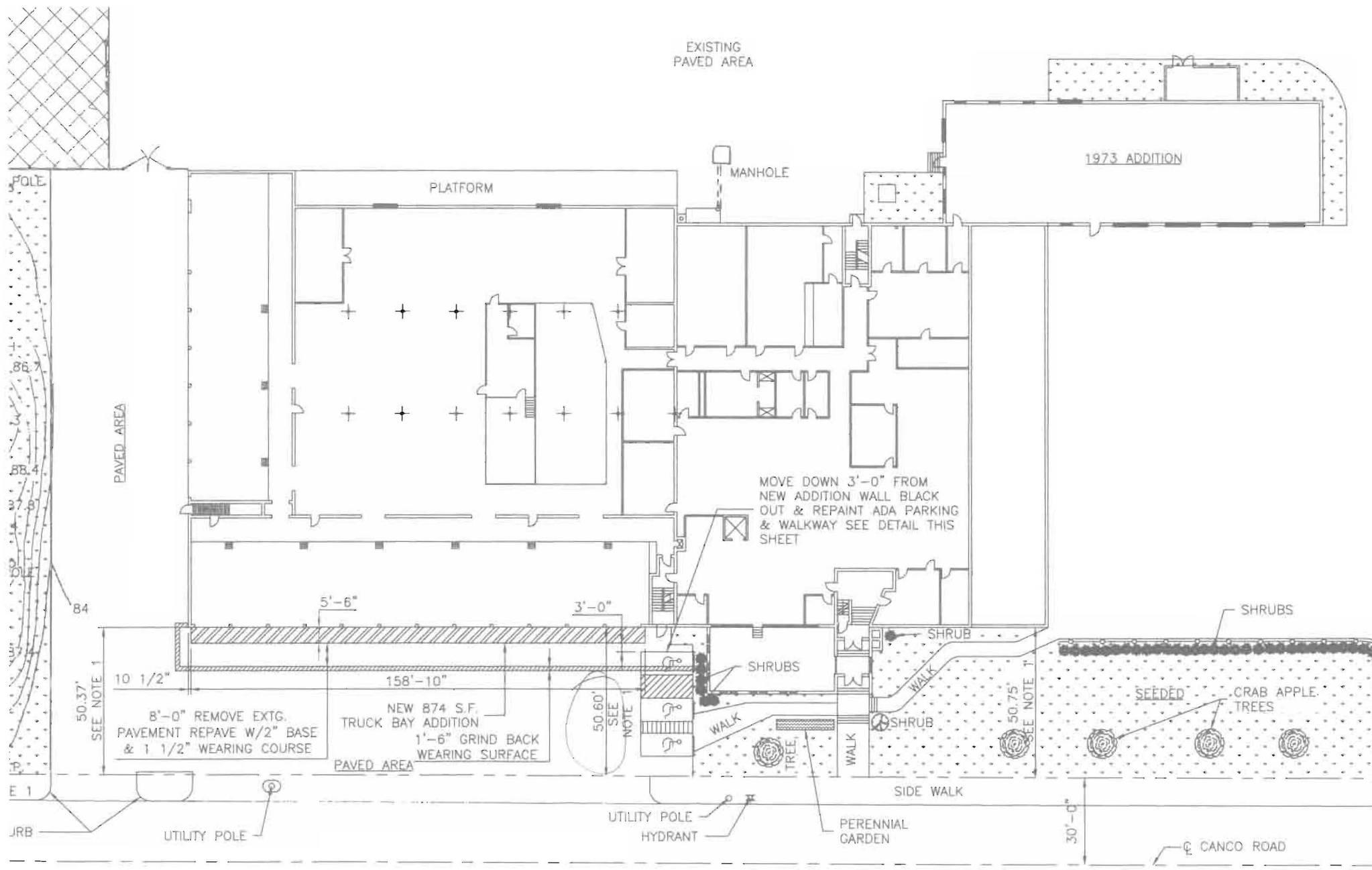
Sincerely,

Daniel E. Spaulding P.E.

CC: R. Meader, CMP
R. Arbour, CMP
G. Mirabile, CMP

PROJECT DATA

The following information is required where applicable, in order complete the application

Total Site Area	308,640	sq. ft.
Proposed Total Disturbed Area of the Site	2,685	sq. ft.
(If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland)		
IMPERVIOUS SURFACE AREA		
• Proposed Total Paved Area	218,500	sq. ft.
• Existing Total Impervious Area	284,510	sq. ft.
• Proposed Total Impervious Area	284,510	sq. ft.
• Proposed Total Impervious Area	284,510	sq. ft.
• Proposed Impervious Net Change	0	sq. ft.
BUILDING AREA		
• Proposed Building Footprint	53,242	sq. ft.
• Proposed Building Footprint Net change	874	sq. ft.
• Existing Total Building Floor Area	103,375	sq. ft.
• Proposed Total Building Floor Area	104,249	sq. ft.
• Proposed Building Floor Area Net Change	874	sq. ft.
• New Building		(yes or <u>no</u>)
ZONING		
• Existing	IM - INDUSTRIAL - MODERATE IMPACT	
• Proposed, if applicable	N/A	
LAND USE		
• Existing	CMP SERVICE CENTER - ELECTRIC UTILITY	
• Proposed	SAME	
RESIDENTIAL, IF APPLICABLE		
• Proposed Number of Affordable Housing Units	N/A	
• Proposed Number of Residential Units to be Demolished		
• Existing Number of Residential Units		
• Proposed Number of Residential Units		
• Subdivision, Proposed Number of Lots		
PARKING SPACES		
• Existing Number of Parking Spaces	257	
• Proposed Number of Parking Spaces	257	
• Number of Handicapped Parking Spaces	7	
• Proposed Total Parking Spaces	257	
BICYCLE PARKING SPACES		
• Existing Number of Bicycle Parking Spaces	0	
• Existing Number of Bicycle Parking Spaces	0	
• Proposed Number of Bicycle Parking Spaces	0	
• Total Bicycle Parking Spaces	0	
ESTIMATED COST OF PROJECT		
	\$ 350,000	



8'-0" REMOVE EXTG. PAVEMENT REPAVE W/2" BASE & 1 1/2" WEARING COURSE

NEW 874 S.F. TRUCK BAY ADDITION 1'-6" GRIND BACK WEARING SURFACE

PAVED AREA

MOVE DOWN 3'-0" FROM NEW ADDITION WALL BLACK OUT & REPAINT ADA PARKING & WALKWAY SEE DETAIL THIS SHEET

SHRUBS

SHRUB

SHRUB

SHRUB

WALK

WALK

WALK

WALK

TREE

PERENNIAL GARDEN

SIDE WALK

SEEDED

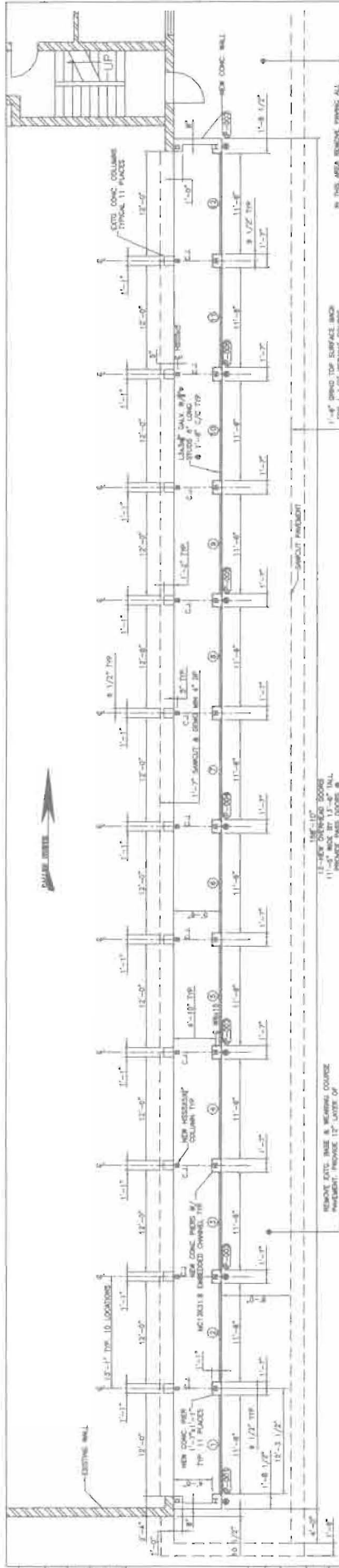
CRAB APPLE TREES

UTILITY POLE

HYDRANT

UTILITY POLE

CANCO ROAD

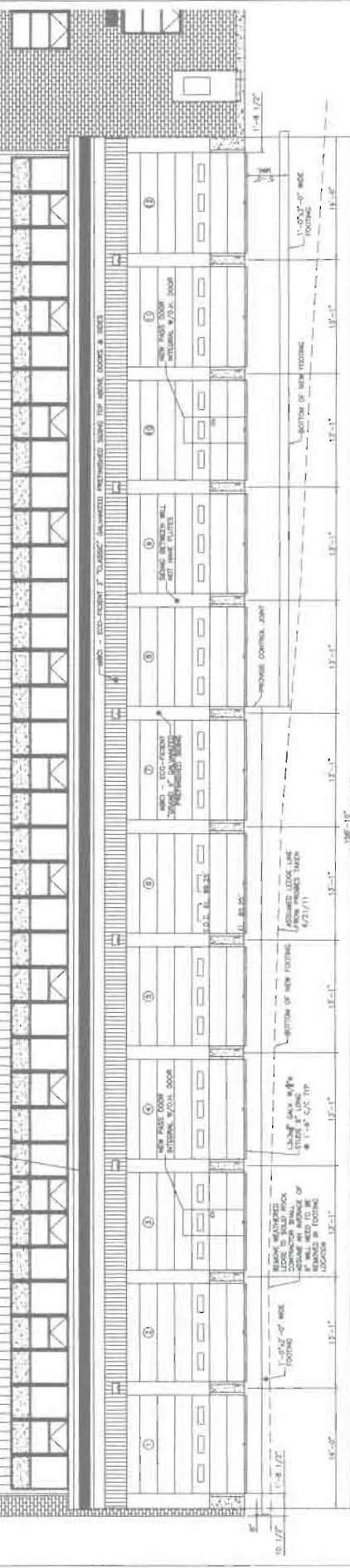


NEW TRUCK BAY ADDITION PLAN VIEW

REMOVE EXIST. WALL & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE

REMOVE EXIST. WALL IN
 FOOTING & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE

REMOVE EXIST. WALL IN
 FOOTING & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE

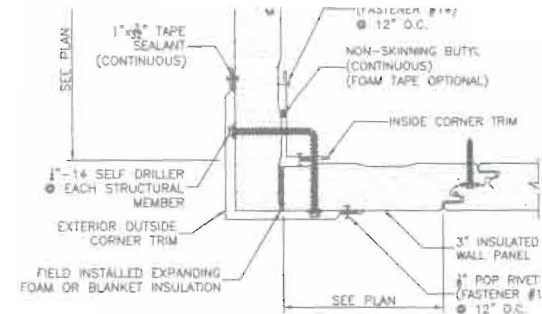
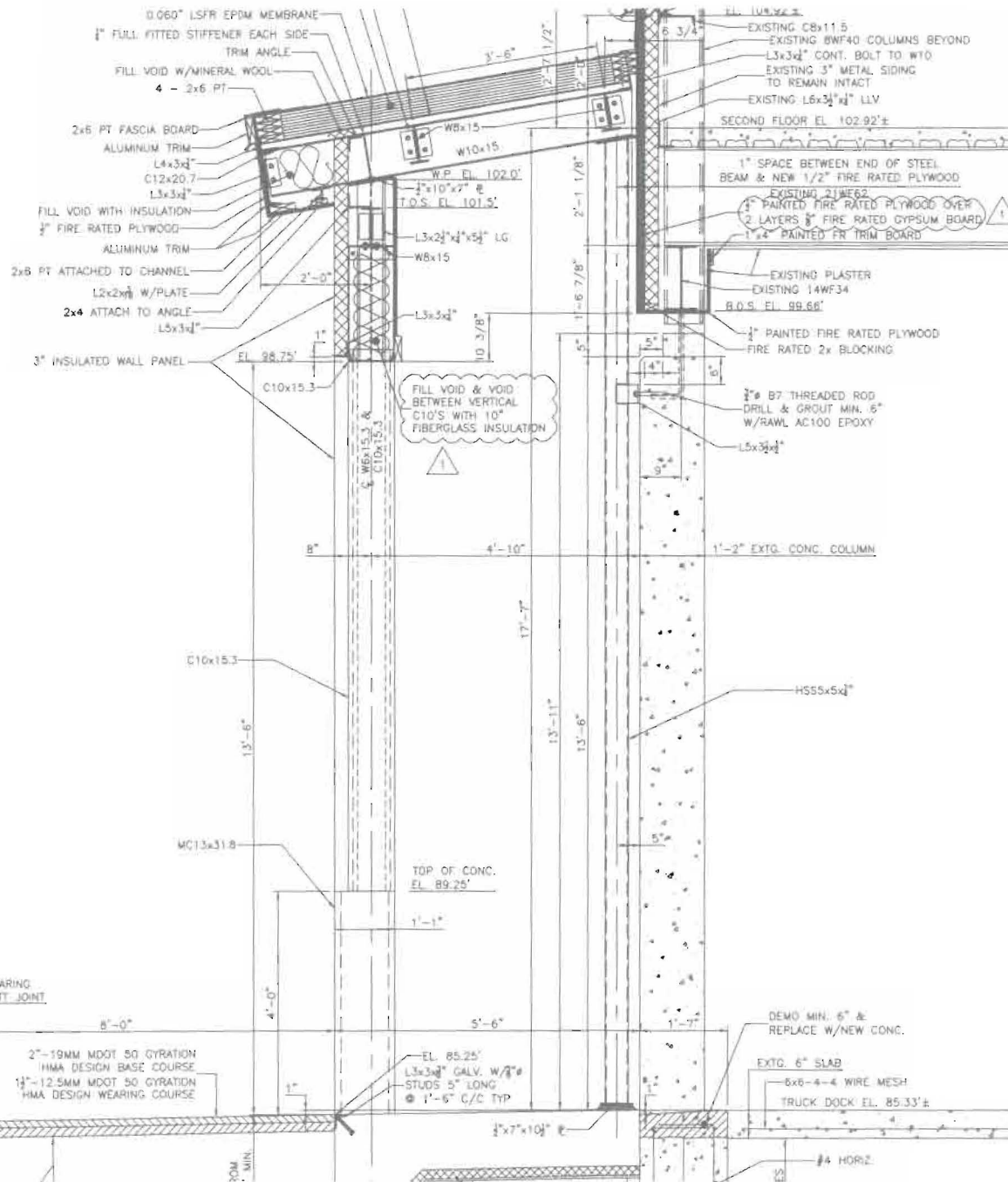


NEW TRUCK DOCK ADDITION EAST ELEVATION

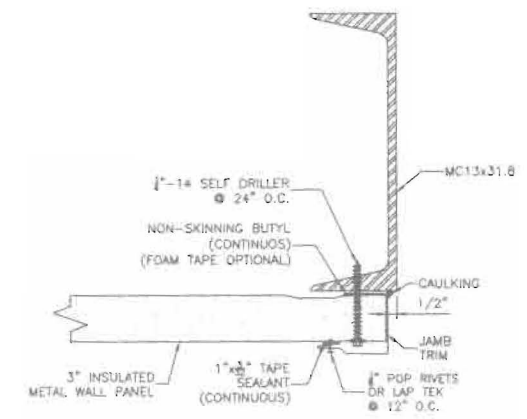
REMOVE EXIST. WALL & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE

REMOVE EXIST. WALL IN
 FOOTING & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE

REMOVE EXIST. WALL IN
 FOOTING & REPAIR COURSE
 REPAIRMENT: PROVIDE 1" LAYER OF 18
 REINFORCING BARS IN EXISTING COURSE
 REMOVE EXIST. WALL & REPAIR COURSE



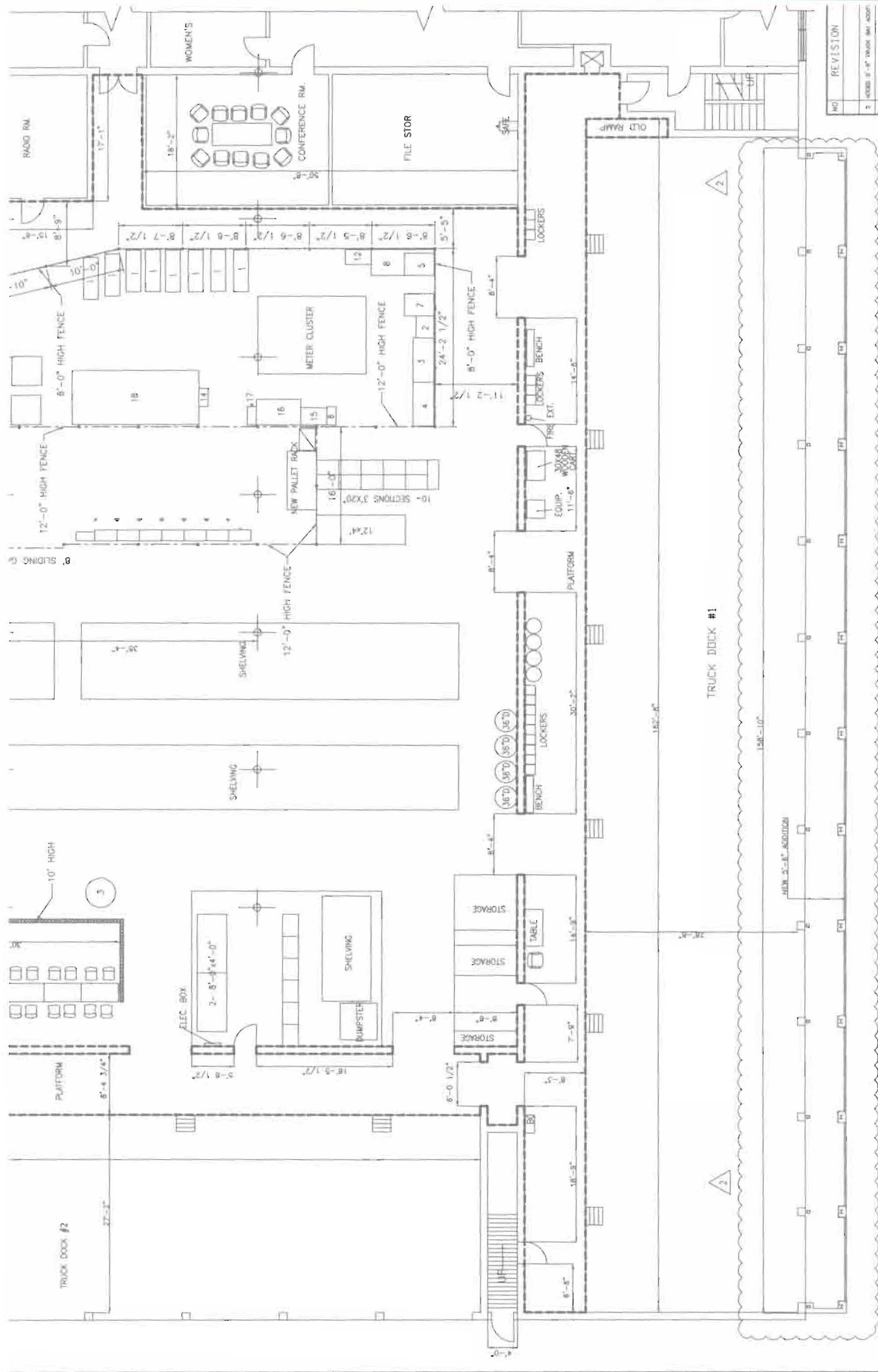
**INSULATED METAL WALL PANEL
TYPICAL OUTSIDE CORNER DETAIL**
SCALE: N.T.S.



**INSULATED METAL WALL PANEL
TYPICAL DOOR JAMB DETAIL**
SCALE: N.T.S.

NO.	REVISION
1	RECORD DRAWING
2	ISSUED FOR CONSTRUCTION
3	REVISION

DESIGNED BY	DR
DRAWN BY	FR
CHECKED BY	FR
DATE	



WAREHOUSE & TRUCK BAY PLAN
SCALE: 1/8" = 1'-0"

2. PROPOSED NEW 874 FOOT EAST TRUCK BAY ADDITION:

The existing distance from the interior loading dock to the existing overhead doors at the east truck bays is no longer adequate for the new longer CMP line trucks. The existing east truck bay is classified as an IBC low hazard storage use group S-2. In order to adequately house the new line trucks CMP is requesting to construct a truck bay addition. The new addition would be on the east side of the building where the east truck bay is currently located. The existing east bay currently has twelve (12) - 13'-6" high by 12'-0" wide overhead doors. The new addition would be 5'-6" deep and 158'-10" long. It would have the same twelve (12) overhead doors which would be 13'-6" high by 11'-6" wide.

The new building which is in the IBC low hazard storage use group S-2 would be constructed of non combustible materials with a single mono pitched roof. The existing east truck bay is currently sprinkled and the existing system would be extended to protect the new addition.

The existing building is in the IM- Industrial – Moderate Impact zone. The existing building has an overall height of 30'-8" above grade and a minimum setback from the east property line of approximately 50'. The new 5'-6" addition would reduce the east property line set back to 44'-6". The new addition meets the front setback requirements of Section 14-250 (f) which requires one foot of setback for every 1 foot of structure height.

Front Setback

The existing building and new east truck bay addition has a minimum setback of 65' to the south property line. The new addition meets the side yard setback requirements of section 14-250 (b) which requires 1 foot of setback for every one foot of height up to 25 feet.

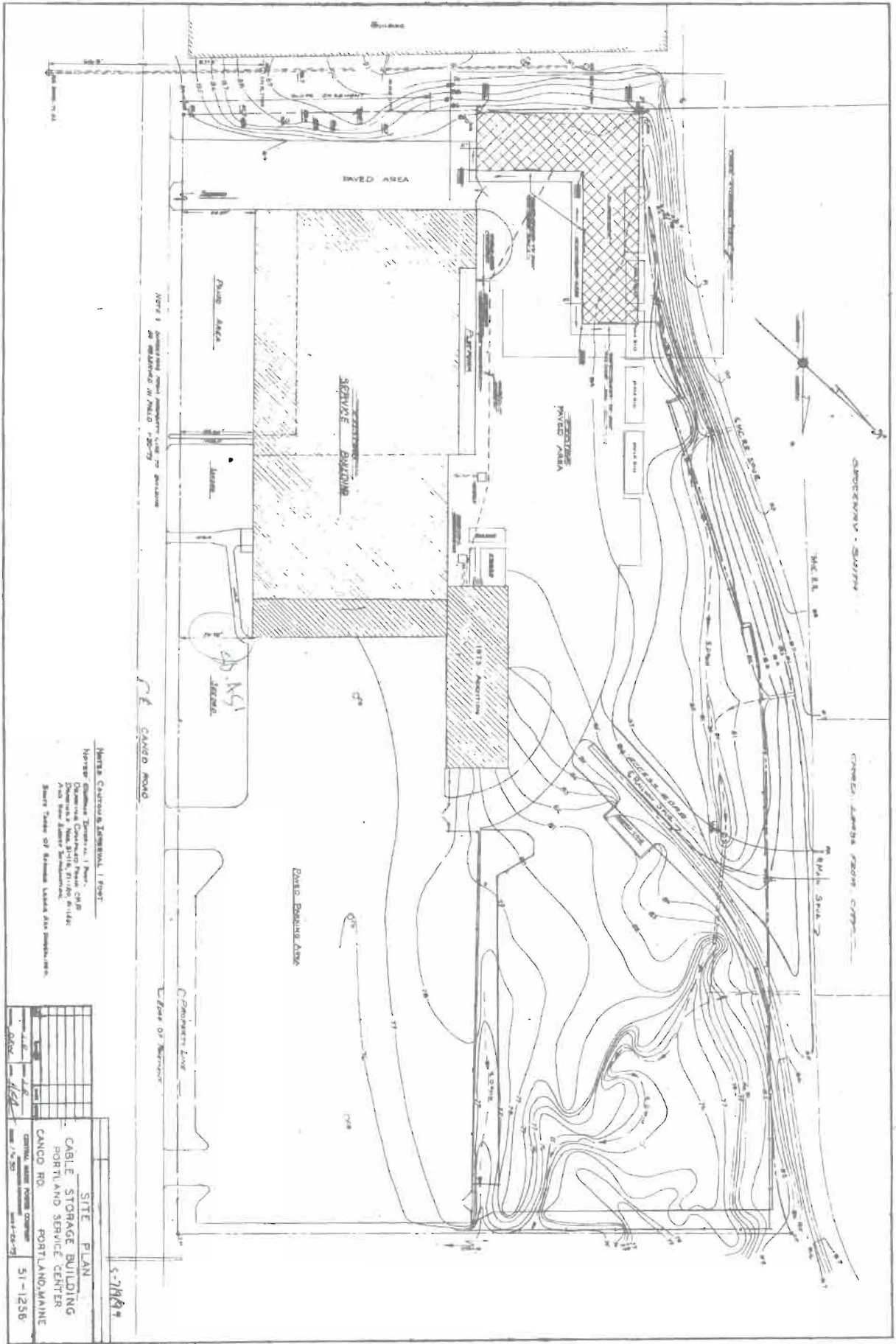
The existing site occupies approximately 308,640 square feet with approximately 284,510 square feet of impervious area which equates to an impervious surface ratio of approximately 92%. Section 114-250 (b) requires a maximum 75% impervious surface ratio. CMP is asking for a waiver on the 75% requirement because the new 874 square foot addition will be placed in an area that is already impervious and will not increase the existing 92% impervious ratio.

Fire protection would be provided by extending the existing east truck bay sprinkler system to cover the new addition area.

The new addition would not increase the impervious area as the location of the new addition is an existing paved drive.

There will be no additional city water or sewerage requirements due to the new addition.

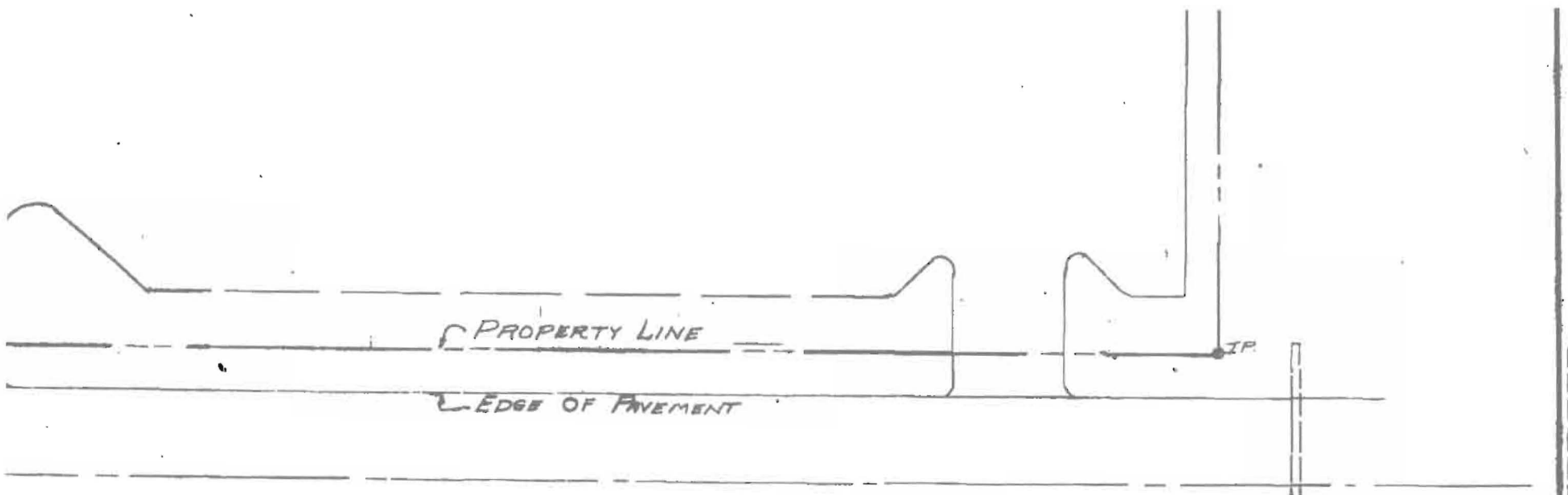
7. Engineer:
- Civil/Structural Engineering/Project Management:
Spaulding Engineering and Construction Services, Inc.
24 Common Street
Waterville, Maine 04901
Daniel E. Spaulding P.E. # 6097
Tel. (207) 861-9923
Fax (207) 861-9923
Cell: (207) 649-6726
Email: dan@spauldingneengineering.com
8. Project Data:
- The total site area is 308,640 square feet.
 - The total disturb area for the new addition would be approximately 2685 square feet which would be represented by the 874 square feet for the building footprint and approximately 1811 square feet of repaving in front and on the sides of the new addition.
9. Impervious Surface Area:
- Proposed Paved Area: 218,500 square feet
 - Existing total impervious area: 284,510 square feet
 - Proposed total impervious area: 284,510 square feet
 - Proposed Impervious net change: 0 square feet
10. Building Area:
- Proposed Building Foot Print: 53,242 square feet
 - Proposed Building footprint net change: 854 square feet
 - Existing Total Building Floor Area: 103,375 square feet
 - Proposed Total Building Floor Area: 104,249 square feet.
 - Proposed Building Floor Area Net change: 874 square feet
 - New Building: No
11. Zoning:
- The existing service building is in the IM – Industrial- Moderate Impact zone.
 - Proposed, if applicable: N/A
12. Residential:
- N/A:
13. Parking Spaces:
- Existing number of parking spaces: 257
 - Proposed number of parking spaces: 257
 - Number of handicapped parking spaces: 7
 - Proposed total parking spaces: 257



NOTE: Proposed paved areas are shown on drawing as existing on field - 2077

Hanna, Carolyn; Engineer, 1 Foot
 Norris, George; Engineer, 1 Foot
 Dismore, Tom; Surveyor, 1 Foot
 Van Der Aar, Surveyor, 1 Foot
 State Title of Kansas, Kansas City, Mo.

SITE PLAN	
CABLE STORAGE BUILDING	
PORTLAND SERVICE CENTER	
CANCOS RD. PORTLAND, MAINE	
DATE	5-1-56
BY	11/24
CHECKED	
SCALE	
PROJECT NO.	51-1256



VAL 1 FOOT

1" = 1 FOOT.
 ED FROM C.M.P.
 -116, 51-120, 51-120
 INFORMATION.

EXPPOSED LEDGE ARE UNDERLINED.

SITE PLAN	
CABLE STORAGE BUILDING PORTLAND SERVICE CENTER	
CANCO RD.	PORTLAND, MAINE
CENTRAL MAINE POWER COMPANY ENGINEERING DEPARTMENT	
SCALE 1" = 30	DATE 4-26-73
51-1256	

DESIGNED <u>LR</u>	CHECKED <u>LR</u>
DRAWN <u>DEVY</u>	APPROVED <u>HFB</u>



138 Canco Road Portland. Existing East Truck with 12 overhead doors facing Canco Road. New addition will be out 5'-6" toward Canco Road to provide storage space for new longer line trucks.



138 Canco Road Portland. Existing East Truck with 12 overhead doors facing Canco Road. New addition will be out 5'-6" toward Canco Road to provide storage space for new longer line trucks.

Spaulding Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

August 26, 2011

Ms. Jeannie Bourke
Building Inspections Division
City of Portland Maine
389 Congress Street
Portland, Maine 04101-3509

RE: Central Maine Power Company – 138 Canco Road, Proposed New 874 Square Foot East
Truck Bay Addition – Special Inspections

Dear Jeanie,

Spaulding Engineering and Construction Services, Inc. (SECS) will be performing project/construction management and periodic field inspections to verify quality control and quality assurance (QA/QC) and ensure the project is being constructed in accordance with the project Drawings, Specifications and any specific Building permit requirements. The project/construction management will be performed by Daniel E. Spaulding P.E. Project periodic QA/QC site inspections will be performed by Daniel E. Spaulding P.E. or Jack Belyeu, SECS technician/field inspector. We believe that the following procedures and inspection program satisfies the intent of the 2009 IBC Chapter 17 Structural Tests and Special Inspections.

SECS will review all project submittals for compliance with the project Drawings and Specifications. Submittals requiring SECS review for compliance with the Contract Drawings and Specification will include but not be limited to the following:

- Concrete reinforcing shop drawings
- Concrete mix design
- Under slab vapor barrier
- Gravel backfill gradation
- Asphalt paving
- Structural steel shop drawings
- Steel decking shop drawings
- Elastomeric roofing, insulation, accessories and appurtenances
- Insulated steel wall panels, trim and appurtenances
- Wall vapor barrier
- Overhead doors, tracks, operators and appurtenances
- Paint

SECS has constructed several new facilities and building modifications/additions for Central Maine Power Company over the past few years which include Service Buildings in Skowhegan, Fairfield, Jackman, Lewiston, Stratton, Rumford, Belfast and Wiscasset. We have also constructed two building additions to accommodate CMP larger trucks similar to the Portland addition in Dover and Rockland.

RECEIVED
AUG 26 2011
Dept. of Building Inspections
City of Portland Maine

Spaulding Engineering and Construction Services, Inc.

24 Common Street ~ Waterville, Maine 04901
Phone (207) 861-9923 ~ Fax (207) 861-9923

SECS performs periodic site inspections on at least a once a week basis or more frequently as required to perform inspections of the critical components of the structure. Inspections/site meeting will include the following:

- Construction kick-off meeting at the site to introduce all key project individuals, define roles and responsibilities. Develop site contact list of all key personnel.
- Perform inspection of bottom of footing bearing surfaces.
- Perform pre-concrete inspection of all concrete formwork; inspections of all concrete footing, wall, pier and concrete slab reinforcement to verify reinforcement size, spacing and placement and verify location and placement of all cast in components including anchor bolts.
- Be onsite during all concrete placements to monitor placement and consolidation methods. The Contractor is responsible to have an independent concrete testing agency onsite for all concrete placements to monitor air content, slump and concrete temperature. Concrete cylinders will be taken to verify the concrete 28 day compressive strength. SECS inspectors coordinate with the independent testing agency to ensure the concrete meets the project specifications.
- Perform inspections and verification of all under slab insulation and vapor barrier installations.
- Perform periodic inspections of structural steel erection and review snug tight connections to ensure all bolts are in place and tightened.
- Perform periodic inspection of steel deck to verify fastening pattern and size prior to any installation of roofing insulation.
- Perform periodic inspection of all siding, trim and roofing installations.

SECS completes a daily construction report for every site inspection, a concrete inspection checklist prior to any concrete placements and produces a Weekly Construction Report. Copies our typical forms are attached.

We are in hopes believe that the project/construction management and inspection procedures outlined above are as the City of Portland expects and should you have any questions or comments, please contact me at (207) 861-9923.

Sincerely:

Daniel E. Spaulding P.E.

CC: R. Meader, CMP
G. Mirabile, CMP

RECEIVED
AUG 26 2011
Dept. of Building Inspections
City of Portland Maine





CITY OF PORTLAND, MAINE
Department of Building Inspections

Original Receipt

7-29-2011

Received from _____

Location of Work _____

Cost of Construction \$ _____ Building Fee: _____

Permit Fee \$ _____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 3500

Building (I1) _____ Plumbing (I5) _____ Electrical (I2) _____ Site Plan (U2) _____

Other _____

CBL: 13A 6001

Check #: 6411 Total Collected \$ 3,500

**No work is to be started until permit issued.
Please keep original receipt for your records.**

Taken by: [Signature]

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy

Memorandum
Department of Planning and Urban Development
Planning Division



To: Phil DiPierro- Development Review Coordinator
Assessor's Office
Capt. Chris Pirone- Fire Department
Matt Doughty- Public Services
Marge Schmuckal- Zoning Administrator
Bill Clark- Public Services and CD only

From: Shukria Wiar, Planner

Date: August 29, 2011

RE: 138 Canco Road- CMP Building Addison

CBL: 148-A-006

App #: 2011-305

Project Address: 138 Canco Road

Let me know if you have any questions.

Thanks.

*Stamped Approved
Site plan -
on hold waiting for
Site plan Approval*

